

MOTOR AGE

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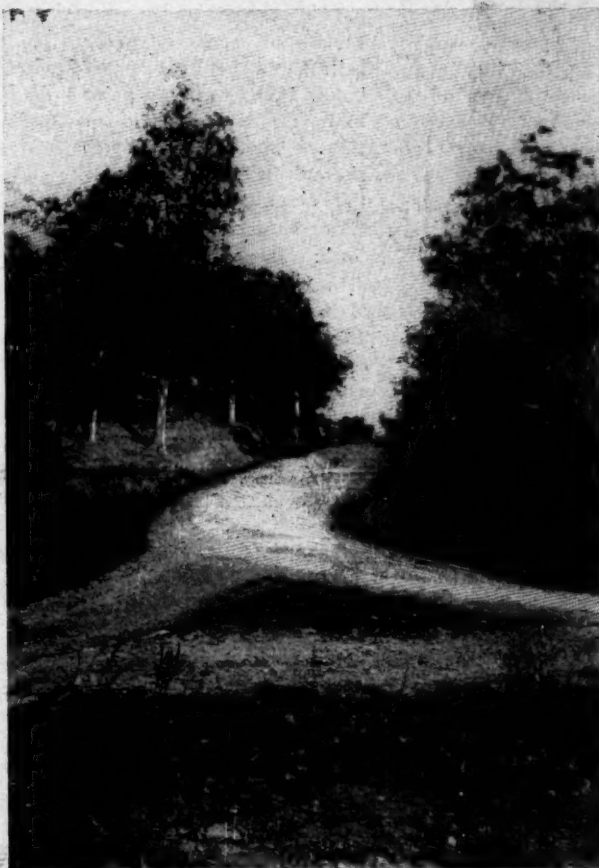
CHICAGO, NOVEMBER 1, 1906

\$2.00 Per Year

IN THE FOOTHILLS OF THE OZARKS

NOWADAYS it is not necessary to get into the Canadian woods or the Rocky mountains to find roads whose hills will test any car, no matter how well equipped in the matter of power—such roads are to be found nearer the interior of the country. Out of the southwestern metropolis of the United States—St. Louis—there leads a road that in the days of cycling was a terror to riders from neighborhoods blessed with level roads and even to those who prided themselves on ability to mount difficult grades. Many a crack rider has fallen by the wayside on the famous old De Soto road. The road leads out of St. Louis along the Mississippi river to the south, soon entering the foothills of the Ozarks. It runs through a picturesque though not particularly fertile country, past huge groves, up steep hills and down into deep valleys. A traveler would not be impressed with the idea that the inhabitants along the highway are particularly blessed with riches, and yet they manage to keep up their roads in a manner that would make some of the more prosperous sections of the world look cheap by comparison. A portion of the road is macadamized and the remainder is graveled and well kept at all times of the year. Almost from the time Carondelet is left behind the road loses its levelness and by the time the Merrimée river is reached one is well into the hills.

A recent Sunday, after a heavy 36-hour rain, saw a party headed over this road on a testing tour, a 1907 Dorris car containing Mr. and Mrs. Krenning and Superintendent Dorris, of the Dorris Motor Car Co., and a staff correspondent of Motor Age. It was planned not alone as a testing trip, but as a pleasure jaunt as well. St. Louis proper was left at 11 o'clock sharp, with watchful eyes set for policemen. Carondelet was a run of but 25 minutes, though the going was such as to compel the wish that chains had been attached before the start. The rain of the



DANGEROUS HILL ON DE SOTO ROAD

hours before had not had time to seep into the hard road and as a result there were pockets filled with water anywhere from 1 to 5 inches in depth. The worst part of the road, however, proved to be well within the corporate limits of St. Louis, for by the time the Merrimée river bridge had been crossed and another county had been entered the road showed decided improvement. The car, with Mr. Dorris at the wheel, was sent along at a steady clip that ranged from 30 to 35 miles an hour on the level, though the average was brought below these figures on account of the teams that were encountered, and Missouri horses have not become absolutely educated to the motor car.

The crossing of the Merrimée meant a change in the topography of the country—

from gradual rolls the road hastily ran into a series of well-defined hills—not grades, but hills—and in the small space of an hour out the biggest terror of them all—Hell-and-Damnation hill—was encountered. It isn't such a bad proposition on the outward trip, but it used to be sufficiently tough to compel most bicycle riders to do a line of walking rather than to use up energy by attempting to ride it. The average man from a level country would have feared that hill even before he had reached it and ten to one he would have shifted his gears from high to one of the easier speed change notches. There is very little chance to rush this immense grade and the two or three rather sharp turns require nice handling of the wheel with a little closing of the throttle in order to be on the safe side. The hill was taken on high gear, but half way up a fractious Missouri team was encountered on the way down, exerting all its strength to hold back a light wagon loaded with apples. A record for having gone the entire distance on high gear had been desired and it was reasonably safe to assert that if this hill could be overcome the trick could be turned. With the muffler cut-out closed and the motor throttled to a point whereby the car was barely moving, the team was passed, but not until it had made a start for St. Louis that would have landed it there in record time had the gait been kept up. Moxville hill had been surmounted on the high gear and Mr. Dorris smiled.

This hill road is winding, but after passing out of the timber a valley appears, to the eye about 2 or 3 miles across, with a big drop and as sudden a rise on the other side. Down in this valley lies sleepy but famous old Bulltown. It isn't much of a town, but it used to be a haven for cyclists that once roamed the De Soto, for many a man now well known in the automobile world will recall some of the resta-



CURVE ON KIMMSWICK HILL

that were enforced at Bulltown. Down off of Hell-and-Damnation hill the car slides with terrific velocity, even with all brakes set, the odor of scorching camelshair cloth greeting the travelers. There are sharp turns in this hill and a steep precipice to the left and close to the road. To permit a car to get beyond the control of the driver means a wreck. No sooner has the bottom of the valley been reached than the climb begins again and into Bulltown it is a steady up pull for at least $\frac{1}{4}$ mile, with two difficult turns at the very end edge of the town. Bulltown was reached at 12:25, being a 15-minute ride from the top of Hell-and-Damnation hill. There isn't a thing in the town to attract an motorist and so he naturally pushes on. A half hour or 10 miles away Hillsboro is found nestling in a little valley, with Frisco hill separating it from Bulltown. Frisco Hill is by no means anything like Hell-and-Damnation for elevation, but it does last seemingly a long time, particularly when on the high gear. Now comes a pretty little creek, which must be forded, and then another steady pull up and up to the height of Kimmswick hill.

Kimmswick is by no means easy; in fact, it is a pretty close rival to Hell-and-Damnation, although the road is far better on the surface. Kimmswick, however, has a bad turn near the bottom and it is possible to miss this and send a car down into the valley below and the occupants to the clouds above. It is a downhill proposition on the outward trip, but it is encountered with a vengeance on the return trip. After



Hillsboro and Victoria are passed the road makes a sharp turn to the right in leaving the latter place. Here again there is a climb, and one that would make the Algonquin hills look like grades, except that it is not long. But while it goes upward it also curves to the left away from the railroad, which is 100 feet below it, and at this point built up on a tressle at that. The outward trip showed a total of $48\frac{1}{2}$ miles and the schedule of times en route was as follows: Left St. Louis, 11 a. m.; Carondelet, 11:25; Hell-and-Damnation hill, 12:10; Hillsboro, 1; Victoria, 1:15; De Soto, 1:24. Thus the trip of $48\frac{1}{2}$ miles

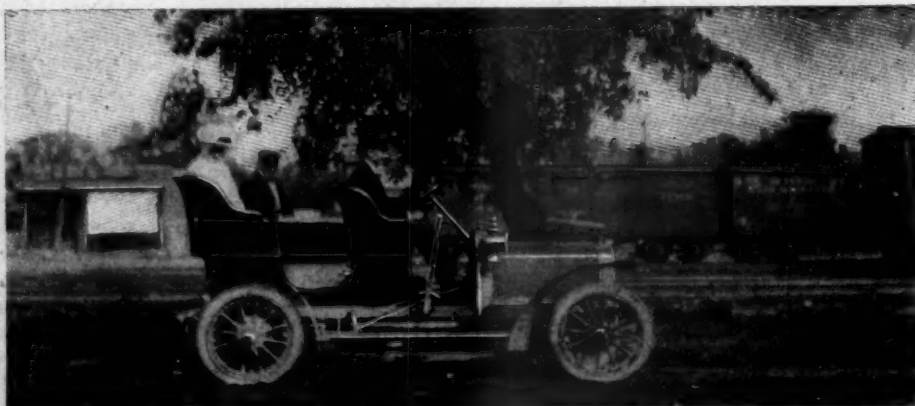
was made in 2 hours 24 minutes.

The motor and the car, being comparatively new, were looked over before the return trip after dinner was begun, but no adjustments were made. It was a jaunt back, with no attempt to do a high speed stunt on the hills. In fact, it would be criminal for any driver to force a car over Hell-and-Damnation hill going north. The road had now become pretty well dotted with horse-drawn vehicles and the pace would have to be a little slower as a result, particularly on the turns and up the hills. Leaving Bulltown on the way back, the $\frac{1}{4}$ -mile coast took the car well up to the foot of Hell-and-Damnation hill. According to the odometer this hill is 7-10 mile long and according to the speedometer the car traveled up the hill at a little over 15 miles an hour, a stop watch showing the exact time for the climb to have been 2

minutes 53 $\frac{3}{4}$ seconds, and the top of the hill had been reached on the high and intermediate speeds. On the return trip Rogers hill was encountered and, unfortunately, a couple of timid Missouri women and a Missouri horse. It was a case of stop the car or see a runaway and stopping a car on a dangerous hill or seeing a runaway with a couple of women in the rig is not pleasant. So the car was stopped and the brake locked until the horse could be led past the car. The car was started on the intermediate and after perhaps a matter of 30 yards had been traveled the high gear was brought into play. Notwithstanding the fact that there was no attempt at making time, the return trip, with Mr. Krenning driving, was made in exactly the same time as the outbound trip, but over dried-out roads.

NEW ENGLAND JAUNT OVER PLEASANT ROAD

Through Vermont, over the Green mountains into New Hampshire, through the White mountains to Mount Washington, past Crawford Notch, up the "tug of war" into Maine and back along the coast, is described as an ideal course for a summer cruise in a motor car by those who have made it. It also makes a fine test of the stamina of a car, for the roads are good, bad and indifferent—in some places almost impassable. J. Lowell Bacon, a Massachusetts motorist, knows every foot of this route, for it is his summer stamping ground and he and his 26-30-horsepower Mitchell have performed many a stunt among the hills. One bit of highway in particular impressed itself on Mr. Bacon's memory. "It really was flattered by being called a road," says the Bay State man in describing the stretch. "If you were to take a car over $5\frac{1}{2}$ miles of



ARRIVAL AT THE TOWN OF DE SOTO



APPROACHING THE DESCENT ON KIMMSWICK HILL

paving blocks set on end about 3 or 4 inches apart they would hardly furnish a surface as bad or subject a car to so much strain and jarring as this did. It was of clay and had previously been soaked by rain, traveled over by heavy teams, then dried to the hardness of stone. That, however, was the only blot on my trip. We made light of it, for after that the country was beautiful, the air the finest to be breathed in the mountains of Vermont and New Hampshire and I thoroughly enjoyed the outing. Returning along the coast was the easiest part of the journey, as I encountered the best of the eastern highways and made good time. My program was to make my morning start at about 9 o'clock, stop an hour for dinner and finish my day's ride about 5 o'clock in the afternoon, the daily trips averaging from 150 to 212 miles, according to the going. The whole trip covered 1,100 miles and consumed 6 days and not once did the motor miss an explosion."

REAL HILL-CLIMBING UP WESTERN GRADES

"Butterflies," as they used to term the boulevard riders in the old cycling days, never get the real enjoyment out of motoring that is possible. The driver who hikes for the country on every opportunity is the one who gets his money's worth, for he sees sights one cannot enjoy even when whizzing through the land in a fast passenger train. There's picturesque scenery, exhilarating dashes over smooth country roads and scrambles up steep inclines that repay him for all the hardshops he encounters.

Once in a while the "butterfly" is coaxed into getting off his favorite boulevards upon the occasion of some event like the hill-climb at Algonquin, Ill., and on that insignificant grade he gets the idea that he is experiencing all the joys of hill-climbing. But those who have tackled real mountains know better than this. To them Algonquin's hill is about as exciting as ascending a viaduct. Those who have been fortunate enough to get out as far as the Pacific coast and meet nature face to face delight to laugh at the "butterflies" and tell of stunts such as climbing a grade that is 1 mile high in 28 miles and is climbed in a little over an hour and a half. The Pacific coast people tell of the tough climb encountered at Inspiration Point, one of the highest spots in the Yosemite valley, and pictures from there bear them out in their stories. Photographs show a huge hill in the left background rising 3,000 feet in the air. The grade runs from 8 to 18 per cent and there are about 400 turns on the way up. There's a little colony of Mitchells around Inspiration Point and the photographer recently snapped five of them carrying twenty-two people up the mountain. They make light of the task, Motor Age's informant writes, for they are used to the climb. But motorists in the central states would not consider it such an easy task.

and probably some of them would declare that the mountain could be climbed much easier in an elevator than a motor car. "Hill-climbing, though, is becoming more popular with motorists now that they realize that it is not the stupendous task it was a few years back when the motor of that day would falter at such an undertaking," declares a man who is an enthusiast. "The past summer has seen some remarkable contests in that line and they all redound to the credit of the motor car. Giant Despair, at Wilkes-Barre, Pa., was attacked by the motoring army and forced to capitulate, while on the Glidden tour it was a constant series of hill-climbs up there in Canada. We got quite a little excitement out of Crawford Notch at the end of the tour, while Indianapolis, Cleveland, Chicago, Denver and other big points have held hill-climbs which have been universally successful, in that few of the cars balked at the grades. Hill-climbing in Great Britain is an everyday occurrence there, while I was just reading of a contest in Australia which created a sensation and in which they used the same formula as they did in the Chicago test. This is remarkable, in that the windy city method was believed to have been original. It must have been a case of minds running in the same channel, though, for the two events were held within 2 weeks of each other and it would have been impossible for the Australians to have secured the formula from Chicago in time to use it. Still, it was a remarkable coincidence and proves there's nothing new."

CLIMBING INSPIRATION POINT, YOSEMITE VALLEY



SHOW PLANS ARE NOW ASSUMING SHAPE

NEW YORK, Oct. 29—Announcements anent the coming shows are falling as thick as autumn leaves from the quills of the rival press agents. Says Duncan Curry, the publicity engineer for the grand central palace exhibition: "While the show committee has arranged a comprehensive and beautiful color scheme of decoration for the interior of the palace, it realizes the truth of the old adage 'that a good wine needs no bush,' and by following nature's lines and colorings it has tried to create a harmonious atmosphere, or, in other words, to provide a beautiful frame to throw into relief the cars themselves, which is, of course, the real object of the show. Recognizing the fact that the motor car is an outdoor vehicle, the committee has gone to nature for its effects, and gray, green and brown form the basis of the color scheme. The columns and panels will be covered with a soft gray cloth, trimmed in white; the signs will be in green on a white background, and the floor covering brown. The gray, of course, typifies clouds, the green the grass and the trees, and the brown the long, dusty highway. The gray walls will be relieved at intervals by club wheels and club flags of orange and green. The chief idea is to form a neutral tone and outdoor atmosphere, avoiding all tawdry, frosted wedding-cake effects and hunting displays calculated to distract the atten-

NEW YORK SHOWS FIGHT FOR SUPREMACY—CHICAGO HAS 193 EXHIBITORS

tion of visitors from the cars and machinery." There is every prospect that the building will be ready for exhibitors long before the first one arrives, so that there should be no delay in having the show complete in all details when the doors are thrown open on the night of December 1. If the exhibits are not in shape, the exhibitors will have either themselves or the transportation lines to blame. The show is already being advertised. The hotels

CHICAGO LIST IS OUT

Chicago, Oct. 29—General Manager Miles, of the National Association of Automobile Manufacturers, has given out for publication the list of exhibitors for the 1907 Chicago show, although he has not made known the space allotments. Up to this date there are over a hundred who will display parts and sundries and nearly a hundred makers of cars that have been assigned space in the Coliseum, the annex or the First Regiment armory. Those makers of cars that are members of the N. A. A. M. will be on the main floor of the Coliseum, most of the foreign cars will be in the armory, while the others will be in the annex and the armory. The sundry people will be in the galleries and in the second floor of the annex.

are now making reservations for rooms, particularly those in the immediate vicinity of Lexington avenue and Forty-second street.

By the way, the American Motor Car Manufacturers' Association is planning a decidedly new and novel scheme for its members, which will differ radically from anything that has been done in the automobile trade. The announcement of the details will be made within a few weeks, by which time the plan will be perfected.

Arthur N. Jervis, boomer-in-chief of the Madison Square garden show, makes the announcement: "More than \$50,000 is to be spent in decorating Madison Square garden for the national show to be held under the auspices of the Association of Licensed Automobile Manufacturers, January 12-19. S. R. Ball, who has charge of the decorations, was sent on a preliminary jaunt through Europe to gather ideas."

Speaking of press agents, the A. L. A. M. makes the following announcement: "R. L. Dunn, who was appointed press agent of the automobile show at Madison Square garden, in January, requested the show committee at its last meeting to relieve him of his duties at its earliest convenience, to enable him to take up a number of other important commissions which have been offered him. The show committee with great regret accepted his resignation, as Mr. Dunn had shown unusual vigor and ability in the work."

MANUFACTURERS ASSIGNED SPACE AT THE 1907 CHICAGO MOTOR CAR SHOW

Exhibitors of Motor Cars

Studebaker Automobile Co.
Wayne Automobile Co.
Winton Motor Carriage Co.
J. Stevens Arms & Tool Co.
Waltham Mfg. Co.
Baker Motor Vehicle Co.
Olds Motor Works.
Autocar Co.
Royal Motor Car Co.
Cadillac Motor Car Co.
Babcock Electric Carriage Co.
George N. Pierce Co.
Locomobile Co. of America.
Premier Motor Mfg. Co.
Maxwell-Briscoe Motor Co.
Packard Motor Car Co.
Smith & Mabley Mfg. Co.
E. R. Thomas Motor Co.
H. H. Franklin Mfg. Co.
Corbin Motor Vehicle Corporation
Haynes Automobile Co.
Peerless Motor Car Co.
Elmore Mfg. Co.
F. B. Stearns Co.
Pope Motor Car Co.
Thomas B. Jeffery & Co.
Apperson Bros. Automobile Co.
National Motor Vehicle Co.
Duryea Power Co.
Electric Vehicle Co.
Knox Automobile Co.
St. Louis Motor Car Co.
White Sewing Machine Co.
Daimler Mfg. Co.
Pope Mfg. Co.
Dayton Motor Car Co.
Woods Motor Vehicle Co.
Lozier Motor Co.
Mitchell Motor Car Co.
Holsman Automobile Co.
Reo Motor Car Co.
Welch Motor Car Co.
Bartholomew Co.
Grout Brothers Automobile Co.
Northern Motor Car Co.
Maumee Motor Car Works.
Auburn Automobile Co.

Meteor Automobile Works.
Columbus Buggy Co.
Cleveland Motor Car Co.
Kansas City Motor Car Co.
Acme Motor Car Co.
Rauch & Lang Carriage Co.
Adams Co.
American Locomotive Co.
Knight & Kilbourne.
Dolson Automobile Co.
Moon Motor Car Co.
Nordyke & Marmon Co.
Rainier Co.
Smith & Mabley.
Rapid Motor Vehicle Co.
C. H. Blomstrom Motor Co.
St. Louis Car Co.
Jackson Automobile Co.
Aerocar Co.
Western Tool Works.
Evansville Automobile Co.
Monarch Motor Car Co.
Austin Automobile Co.
Buckeye Mfg. Co.
Kissel Motor Car Co.
Logan Construction Co.
Dorris Motor Car Co.
C. A. Tileston & Co.
Dragon Automobile Co.
Palais de l'Automobile.
Motorcar Co.
Wayne Works.
Pierce Engine Co.
Riddle-Murray Mfg. Co.
Harrison Wagon Works.
Simplex Motor Car Co.
Moline Automobile Co.
Star Automobile Co.
Deere-Clark Motor Car Co.
De Luxe Motor Car Co.
Chicago Pneumatic Tool Co.
Triumph Motor Car Co.
Staver Carriage Co.
Reliable Dayton Mfg. Co.
W. S. Nessler.
Moline Pump Co.

Exhibitors of Accessories

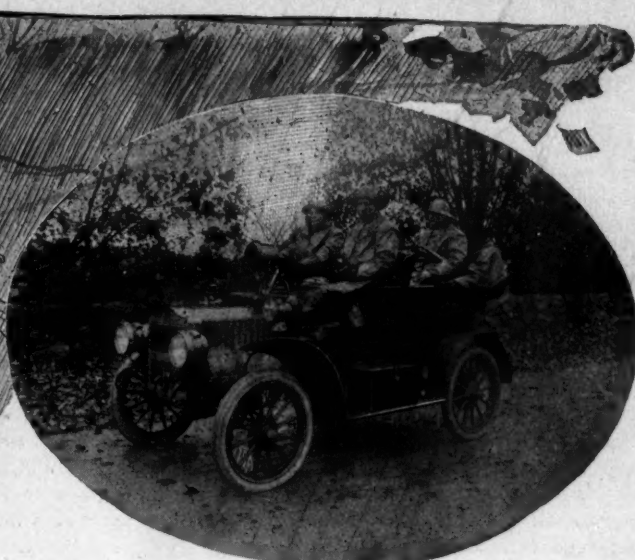
Western Malleable Steel Co.
Lipman Mfg. Co.
Hancock Mfg. Co.
Turner & Fish Co.
R. H. Smith Mfg. Co.
Rands Mfg. Co.
Atwater-Kent Mfg. Works.
William Cramp & Sons Co.
J. H. Sager.
Gemmer Engine Co.
Detroit Lubricator Co.
Consolidated Mfg. Co.
Bethlehem Steel Co.
American & British Mfg. Co.
F. H. Wheeler.
Imperial Brass Mfg. Co.
London Automobile Supply Co.
W. C. Robinson & Son Co.
Kilgore Air Cushion Co.
Avery Portable Lighting Co.
Kinsey Mfg. Co.
Hartford Automobile Parts Co.
Oliver Instrument Co.
Hess-Bright Mfg. Co.
Diezemann Shock Absorber Co.
Sprague Umbrella Co.
Republie Rubber Co.
McGlehan Mfg. Co.
S. F. Bowser & Co.
Weed Chain Tire Grip Co.
Gabriel Horn Mfg. Co.
Steel Ball Co.
Wray Pump & Register Co.
Aurora Automatic Machinery Co.
Pennsylvania Rubber Co.
Chicago Battery Co.
Diamond Rubber Co.
Hyatt Roller Bearing Co.
Whitney Mfg. Co.
Motsinger Device Mfg. Co.
Shelby Steel Tube Co.
Morgan & Wright.
Dayton Electrical Mfg. Co.
J. W. Jones.
C. F. Splittorf.
International Rubber Co.
R. E. Dietz Co.

McCord & Co.
Midgley Mfg. Co.
Hartford Rubber Works Co.
Fisk Rubber Co.
Badger Brass Mfg. Co.
Veeder Mfg. Co.
Gray & Davis.
Goodyear Tire & Rubber Co.
Rose Mfg. Co.
B. F. Goodrich Co.
Timkin Roller Bearing Axle Co.
Baldwin Chain & Mfg. Co.
Brown Lipe Gear Co.
Spicer Universal Joint Mfg. Co.
Long Mfg. Co.
Swinehart Tire & Rubber Co.
Diamond Chain Mfg. Co.
Webb Mfg. Co.
Warner Gear Co.
G & J Tire Co.
Prest-O-Lite Co.
N. Y. & N. J. Lubricant Co.
Warner Instrument Co.
Pantasote Co.
Schwarz Wheel Co.
Remy Electric Co.
Firestone Tire & Rubber Co.
Muncie Auto Parts Co.
Cook's Railway Appliance Co.
Oliver Mfg. Co.
Edmunds & Jones Mfg. Co.
National Carbon Co.
Hartford Suspension Co.
Byrne, Kingston & Co.
Michelin Tire & Supply Co.
Electric Rubber Mfg. Co.
Standard Lamp & Mfg. Co.
Beckley-Ralston Co.
Automobile Supply Co.
Thomas Prosser & Son.
Cullman Wheel Co.
Rushmore Dynamo Works.
Hendee Mfg. Co.
Chicago School of Motoring.
Adapt Machinery Co.
Vesta Accumulator Co.
Reading Standard Cycle Mfg. Co.

MAXWELL CAR WINS NON-MOTOR STOP BET



MEN STOP BUT NOT THE MOTOR



MAXWELL PARTY IN RAIN TOGS

BOSTON, MASS., Oct. 31—Special telegram—When the 20-horsepower two-cylinder Maxwell, with C. W. Kelsey at the wheel, stopped at 3:31 o'clock this afternoon in New York city the motor had been running continuously for 3,000 $\frac{1}{4}$ miles, a record only second to the non-engine-stop stunt of F. A. LaRoche from July 25 to August 9, 1904, when he drove an 18-24-horsepower Darracq from New York to Chicago to St. Louis and back to Gotham over the national pike, a distance of 3,450 miles, without the motor stopping. Detailed information of the finish of the Maxwell trip comes from New York this afternoon. The final stage of the run was over a route embracing Portchester and Larchmont. It was completed in a driving rain storm. The car was finally checked in by Paul L. Smitzee, chairman of the New York Motor Club's technical committee. There was a goodly gathering of well-known motorists at the finish at Resenweber's, among them Chairman Thompson, of the racing board. The whole run of 3,000 miles was finished on one set of International tires with but three punctures. The contemplated run of 7 days ended in New York at 8 o'clock this morning. At that hour the Maxwell was checked in at the New York Motor Club's headquarters at Resenweber's, at Fifty-eighth and Seventh avenue with 2,922 miles to its credit. With C. W. Kelsey as its pilot, Lucius S. Tyler as mechanic and George W. Dunbar, representative of a rival make, as official observer, the car left Boston yesterday at 10:24 a. m. and checked in at Springfield at 6:10 and out of Hartford at 8 o'clock. New York was reached at 3 a. m. today. The intervening time to the finish was put in driving over the boulevards, with the motor still running merrily along without a skip.

At the completion of the 7 days, after a short rest, Mr. Kelsey took Frank Brobst, of New York, aboard as official observer and started in the direction of Stamford to complete the 3,000 miles.

It was at 3:08 o'clock yesterday morning that the Maxwell completed the 2,500 miles necessary to win the \$500 wager. It had 7 days in which to do it, but actually only used 139 hours 8 minutes. It kept going, however, and at 10:24 a. m. had registered 2,634 miles. Then Kelsey got ambitious and determined if possible to go 3,000 miles before stopping the motor. Accordingly he started for New York. The dope on the run showed surprising results. The gross running time was 5 days 19 hours 8 minutes, stops for food, rest, fuel and replenishment aggregating 9 hours. This netted an average of 19.23 miles per hour for the actual running time. The total expenses were:

161 $\frac{1}{2}$ gal. of gasoline at 20c.....	\$32.30
24 $\frac{1}{4}$ qts. oil at 20c.....	4.85
1 spark plug.....	1.50
2 punctures.....	1.00
2 fan belts.....	1.00
1 commutator spring.....	.05
5 lbs. of grease at 15c.....	.75
Total	\$41.45

MAXWELL TRIP FACTS

Distance traveled	- - -	2,500 miles
Time consumed	-	139 hours 8 minutes
Fuel mileage	-	15 1-2 miles per gallon
Total expenses	- - - - -	\$41.45
Expense per mile	- - - - -	0.165
Gasoline consumed	- -	161 1-2 gallons
Oil consumed	- - - -	24 1-4 quarts
Grease used	- - - - -	5 pounds
Cost of repairs	- - - - -	\$4.30

The stunt was brought about by a Boston manager attempting to sell a car. F. J. Tyler, manager of the Maxwell-Briscoe-Boston Motor Co., while extolling the merits of the two-cylinder Maxwell touring car declared that the car would travel 2,500 miles in 7 days and that without stopping its engine. W. H. Doble, the prospective purchaser of the car, smiled incredulously at this assertion and this brought forth the further declaration from Mr. Tyler that he was prepared to back up his statement with a \$500 bet. As Mr. Doble considered this rather a sure thing for himself, he seized upon the offer and the money was deposited in the hands of James Fortescue, secretary of the Bay State Automobile Association, from whose club house the trial started last Wednesday morning at 8 o'clock. Articles of agreement were immediately drawn up whereby it was decided that a two-cylinder Maxwell touring car should carry a driver, mechanic and observer on a continuous trip to and fro between the Bay State Automobile Association club house, in Dartmouth street, in this city, and the Worcester Automobile Club, in Front street, Worcester. The distance between the two places is 44 miles. At 6:30 p. m. Monday the car had completed 2,359 miles. The two drivers who had alternated in this achievement were Lucius S. Tyler and Ralph Coburn. A remarkable thing about the trial was the average time that was kept up almost without exception between Boston and Worcester—2 hours 10 minutes. All kinds of weather were encountered by the drivers, from hot and humid to cold and frosty. On Thursday night the fog was so dense that Coburn could scarcely see 5 feet ahead of him. But three slight accidents were encountered on the entire trip of the Maxwell.

MAKE PLANS FOR ROAD

Vanderbilt and His Colleagues Hope Soon To Have Highway Scheme Working

New York, Oct. 29—Progress in the promotion of the proposed motor highway on Long Island is encouragingly rapid. That the members of the plan and scope committee have been hustling is proven by the reports made at its meeting today at W. K. Vanderbilt, Jr.'s office, at which were present, in addition to the chairman, Jefferson De Mont Thompson, Ralph Peters, Dean Alvord and A. R. Pardington. Dave Hennen Morris, the only absentee, was kept away by illness. Mr. Peters, of the survey committee, reported that donations for 15 miles of the 60 miles between the intended termini, Floral park and Riverhead, embracing the most valuable property of the whole route, had been received. He asked that Mr. Alvord be added to his committee.

Mr. Morris sent drafts of proposed laws to be submitted to the legislature and reported that General George Wingate, with whom he had consulted, was of the opinion that there were few legal difficulties to be surmounted. New laws, or preferably amendments to old laws, would be needed.

Four or five letters containing stock subscription offers of \$5,000 each were handed over to Mr. Thompson, who will prepare subscription blanks and receive subscriptions at 26 West Twenty-seventh street, New York city.

The plan of financing the enterprise to be recommended to the full committee at its meeting next Friday is as follows: Five hundred thousand dollars in 4 per cent first mortgage gold 25-year bonds, and a million each of preferred and common stock. A Wall street offer to underwrite the whole scheme has been made and refused, the plan being to confine the ownership as far as possible to the motoring fraternity. The title to be recommended is "The Long Island Motor Highway, Inc." The full committee will be asked to add to the incorporators and directors: J. Adolph Mottenhauer, commodore of the Corinthian Yacht Club, and H. B. Hollins, a well-known banker.

In an official press report Secretary Pardington says, in part:

"The company promoting this highway will not build a race track. It is planning a highway intended for the use of motor cars at all times, on which unlimited speed may be possible, presenting grades and turns. In one or two instances grades approximating 11 per cent will present conditions which should appeal to the manufacturer. The racing feature will be purely incidental, and can be either promoted on the entire highway, which, as now planned, will be 60 miles long, or can be confined to a stretch of probably 15 or 20 miles, with broad loops at either

end, offering spectacular advantages. It should also be borne in mind that the plan and scope committee is taking up in a broad way with the local authorities throughout Nassau and Suffolk counties the construction of spur lines to act as feeders to the motoring highway and to connect both north and south with the large towns and communities wherein the motor is so popular. The committee also intends to take up with the authorities of the city of New York a widening of all the highways through Queens county, which will act as tributaries to the highway, and also to meet and join the present means of communication between the borough of Brooklyn and Nassau county, which at the present time is far from satisfactory, and, in certain instances, really a disgrace to the city. It is interesting to know that August Hecksher, than whom there is probably no better known good roads and motor car enthusiast, who, at the present time, for the pure love of the object, is acting as a highway commissioner, is to be one of the incorporators. Mr. Hecksher, who is a man of wealth, has agreed to not only act as an incorporator, but also as a director of the company.

"Those manufacturers who have hesitated about co-operating with the company, through fear that it would be dominated by the manufacturing interests, should be advised that no incorporator or director has any trade affiliation, direct or indirect. The motor car highway will not be an advertising adjunct to any manufacturing concern. It will be open to all on equal terms, whether they subscribe or whether they do not subscribe. That they should subscribe, showing their moral and financial support, is evident."

JUST WANTED TO SEE

Philadelphia, Oct. 29—The Philadelphia Cartecar agents were up against a peculiar situation last week. A demonstrator had been sent to a Chestnut street office building to take a prospective purchaser out in the car, which was bodyless, with all its machinery exposed. Pedestrians stopped to examine the car, and in the 5 minutes which elapsed before the driver returned with his passenger a mob of fully a thousand persons had gathered, those on the outskirts being unaware of the cause of the crowd. Policemen came running from all directions, which only added to the excitement. When the cops finally forced their way into the crowd and found the cause of the furor they were as mad as March hares, and were on the point of arresting the innocent driver for obstructing the highway when the passenger, who is a prominent local lawyer, put in a few well-turned legal phrases as to penalties for illegal arrest, etc. The anger of the peace preservers cooled instantly, and they turned their attention to opening a lane through which the Cartecar escaped up the street on its demonstration trip with the lawyer.

FLORIDA MEET CARD UP

Morgan Maps Out Program of Twenty-three Races for Carnival January 22-27

New York, Oct. 29—There will be no change in the time of holding the annual Ormond-Daytona meet. It will take place as formerly during the fourth week in January immediately following the New York show, the Florida East Coast Automobile Association having settled finally on January 22-27 as the date. There has been a radical departure in the lay-out of the contests from that of recent years, which have been given over almost exclusively to the high-speed, free-for-all classes. The card-makers reaching out for radical changes have greatly broadened the field of competition by a more comprehensive system of classification. They have provided eight free-for-all events, three touring car championships, five contests for fully equipped touring cars carrying four passengers, two races for stripped touring cars and five competitions for amateur drivers. Suggestions for a series of races exclusively for American cars with the idea that the seventeen machines built for the American team in the Vanderbilt race might be brought together were turned down on the ground that foreign cars should not even by inference be placed on a pinnacle and that the open races of varied distances offered ample opportunities to them without their having to be put in the light of asking or receiving special favors. In the matter of distances the program calls for four races at 1 mile, two at 2 miles, five at 5 miles, six at 10 miles, four at 30 miles, one at 100 miles and one at 50 kilometers, which seems a fair distribution between short, middle and long distances. The matter of a 300-mile race, which shall be a practical renewal of the Vanderbilt cup contest, is still under consideration, with a good chance of its being run as a wind-up of the meet.

Every effort is to be made this year for a more systematic conduct of the meet. The first step will probably be the announcement with the issuance of the entry blanks of the entire schedule of the meet coupled with the end of the beach chosen for the start and finish, or start or finish each day. Paddocks will be established at the starting point that all contestants may be kept well within reach and control of the officials at all times. It is proposed to have fewer officials—an associate referee at either end and a referee in case of dispute, and two clerks of the course, one at either end. The horde of be-badged officials and committeemen will be no more. Another reform lies in making all races of over a mile standing-start. It will be remembered that last year much of the lost time was due to chasing cars by phone and messenger after false starts.

Everything points this year to a great

meet at Ormond. Never before has the United States been so well equipped with fast racing cars, thanks to the seventeen built for the Vanderbilt cup. The success of races for fully-equipped passenger-carrying touring cars at the two Atlantic City meets seems to insure a new and highly popular class of contests likely to receive numerous entries. Entry blanks and further particulars may be obtained from W. J. Morgan, Bretton Hall, Eighty-sixth street and Broadway, New York city. The segregated schedule of the events, which number twenty-three, follows:

FREE FOR ALL

- 1 mile Dewar world's championship trophy, flying start.
- 1 mile, gasoline cars only, flying start.
- 2 miles, "2-mile a minute" speed crown, flying start.
- 5 miles, international world's championship record race, flying start.
- 10 miles, standing start.
- 10 miles handicap.
- 50 kilometer record race, flying start.
- 100 miles, Minneapolis international world's championship, standing start.

TOURING CAR CHAMPIONSHIPS

- 30 miles, championship for American touring cars, all classes.
- 30 miles, championship for foreign touring cars, all classes.
- 30 miles, international championship, for first three finishers in American and foreign championships.

TOURING CARS, FULLY EQUIPPED

- 1 mile, American championship, "mile a minute" touring cars, to carry at least four passengers, flying start.
- 2 miles, \$1,500 or less touring cars designed for four or more passengers, standing start.
- 5 miles, over \$1,500 and including \$3,000 touring cars designed for four or more passengers, standing start.
- 5 miles, touring cars over \$5,000 designed to carry four or more passengers, standing start.
- 10 miles handicap.

TOURING CARS, STRIPPED

- 30 miles, all classes.
 - 10 miles, for cars listing under \$5,000.
- #### AMATEUR, OWNERS TO DRIVE
- 1 mile, all classes of gasoline cars, standing start.
 - 5 miles, touring cars of all classes, standing start.
 - 5 miles, all classes, standing start.
 - 10 miles, all classes, standing start.
 - 10 miles, touring runabouts of 50-horsepower or less, best average of three races, standing start.

RECORD TRIALS

Facilities will be provided for record trials by all classes of cars entered in the races at the following distances: 1 kilometer, 1 mile, 5 miles, 10 miles.

IN QUANDARY OVER SHOW

Philadelphia, Oct. 30—The national export exhibition building, in which last year's local motor car show was held, having been turned over to the almshouse authorities to accommodate the overflow of paupers, the local show association is in a quandary as to just what to do for a building approaching in size the needs of the occasion. W. J. Foss, Wayne Davis, H. P. Stillman, H. Leeds and W. F. Smith, the show committee, have been looking over the possibilities during the past week, but have seen nothing which will come anywhere near filling the bill. Some have seriously broached a show on the order of a street fair—all the establishments along the row having open house all the week, with music, flowers and the usual trimmings. But it is argued that such a scheme would attract an immense idle element who would interfere with business. Besides, the expenses of such a show would be borne by the individual houses.

KNIGHT IN A FUEL TEST

Post Mortem Trip from Chicago to Cedar Lake Improves Other Mark by 5 Ounces

Chicago, Oct. 29—The technical committee of the Chicago Motor Club, after the recent economy test to Cedar Lake, Ind., offered to officiate at any private trial any member of the club desired to make in the way of a "post mortem" trip over the course used in the economy contest a week ago Thursday. The first to take advantage of this offer was Charles Y. Knight, of Knight & Kilbourne, makers of the Silent Knight, which finished fourth in the original test with a fuel consumption of 2 gallons 3 quarts 14 ounces, the weight of the car with five passengers being 4,225 pounds. The second trip was made last Friday, Mr. Knight putting a curtain in front of his radiator and disconnecting his fan. Facing a stiff head wind all the half century, the Silent Knight improved on its previous performance by 5 ounces, sufficient to have placed it second to the Pierce had it been made a week before. The trip back was unofficial and on this the Silent Knight did even better, traveling the 50 miles on 2 gallons 2 quarts 30 ounces of fuel. A heavier load was carried on the Friday excursion, the scales at Crown Point showing 4,325 pounds.

In order to gain some idea of the temperature of the water in the radiator during the run to Cedar lake, Mr. Knight removed the fitting cap, inserting in its place a standard Fahrenheit thermometer, the graduating figures of which could be seen from the front seat of the car. The first intention was to make the run with the motor fan in service, the hope being that the window curtain used in front of the radiator would be sufficient wind obstruction to raise the water to the boiling point. From the headquarters of the Chicago Motor Club, where the test began, until the German building in Jackson park, 8.1 miles, was reached the temperature of the water on its return from the cylinder jackets stood at 178 degrees. When running south facing the stiff breeze, with the curtain covering the entire radiator front, it dropped to 175, but on turning out of the wind into a sheltered street it almost immediately rose to 180. At this point the fan belt was removed, and the wind curtain retained. It took but 10 minutes to raise the temperature to 205 degrees, facing the wind, with the curtain covering radiator, and immediately a bit of woods or other sheltered stretch of road was reached the water would reach the boiling point, 212 degrees. When the water boiled the curtain was dropped, exposing the radiator front, and almost immediately the temperature fell to slightly below boiling. On raising the curtain the temperature would rise to 212. When

facing the wind, with the temperature at 205, and the curtain up, the mercury would in 1 minute drop to 200 on the lowering of the curtain. The result showed that the extra power needed when traveling against a wind did not do as much to raise the water temperature as did the wind striking the radiator to lower it, proving that running in the teeth of a wind does not raise the water temperature.

The aftermath of the original economy test shows that the Cadillac runabout made the trip on 1 gallon 3 quarts 25½ ounces of gasoline, instead of 2 gallons 6½ ounces, as shown in Motor Age's table last week. The little Pope-Toledo, driven by George Schoeneck, did the distance on 1 gallon 3 quarts 26 ounces, instead of 2 gallons 6 ounces.

WATER THAT WILL NOT FREEZE

Big Rapids, Mich., Oct. 29—Claim is made that a spring has been found near here which supplies water that will not freeze. The discovery was made by men interested in the manufacture of motor cars and a company has been formed which has secured the sales right of the water for the next 10 years. There is something of a romance in connection with the discovery of this water, as the party who owned the spring expected to find oil, and lost \$35,000, all he had, in it. All he got was pure water which did not taste very good and which to him naturally looked entirely useless. It took the natives about 5 years to discover that the water from this spring never froze during the winter months, although Big Rapids is a small sister of Medicine Hat and has lots of weather during the right season. It is asserted that it is an absolutely satisfactory mixture in every way. Its discoverers say they have tested it in actual practice and also had laboratory tests made with excellent results. Its precipitation and corrosive action is something like 3-100,000 more than pure water, or practically nothing at all; and while they never have succeeded in making it freeze in Racine or in Duluth, where they also had it tested, by laboratory, it freezes a trifle lower than 20 below zero. It evaporates much slower than ordinary water, its boiling point being considerably higher, and it is fully as cheap in first cost as any chemically prepared solution, it is said.

POTATO FUEL POSSIBILITY

Washington, D. C., Oct. 27—The importance of alcohol as a source of revenue is at present the chief consideration of the United States department of agriculture, which has taken hold of the work with energy. Dr. Galloway, chief of the bureau of plant industry, has charge of the work and has dispatched agents to Europe to study the great stock potato, which is grown very generally there. Its food value is small, but its yield per acre is immense, being sufficient to produce 600 gallons of the best alcohol.



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FRANCE AND RACING

FRANCE pretends she wants to give up road racing, and certain of its makers probably do. There is not the least danger that she will be so rash as to take away that which has made the French motor car industry. America and Great Britain can far better give up speed contests than can France, whose reputation in the motor car world was won through speed contests on the road. Each new French maker who has suddenly loomed before the world could lay his rapid success through some creditable showing made in road contests, and such facts are too patent for the French maker to kill the goose that laid the golden egg. The case is being argued now, but if it is decided that there shall be no big road contests in France during the year 1907, let the prediction go forth that there will be a change in feeling and that in 1908 there will be a violent recurrence of road racing on Gallic highways, unless France in the meantime decides to follow this country's lead and builds a speedway for all its motor car contests. France will not give up racing; it may, however, cease monopolizing the public highways—and this is sure to be the eventual outcome in all countries where motor car contests are being held at this time.

TESTS AND TOURS

WHEN the National Association of Automobile Manufacturers came to the conclusion that there should be some sort of endurance test apart from the Glidden tour, it voiced the idea suggested by Motor Age frequently during the past 2 years. In the first place the Glidden tour was never intended to be a makers' test, as it proved to be this year, although it was intended to show how well a driver might carry his car through. It was originally intended as a tour, for the purpose of drawing together those enthusiasts of motordom who find enjoyment in touring and in one another's company. The Glidden tour went by the boards much as do club runs that begin as runs but develop into searches. The test which the National

Association of Automobile Manufacturers proposes may be surrounded by rules such as will not only test the cars to their utmost staying qualities but the skill of the drivers as well; the rules ought to be severe and ought to be insisted upon to the letter from the start to the finish. But it will be found after the rules have been adopted, after entrants have agreed to abide by and worked under them, there will be much cause for criticism among those not so fortunate as to go through with clean scores. Those having the test in charge may look forward to receiving all sorts of complaints and many protests, no matter how much publicity may be given the plans made for the conduct of the event. It will, therefore, be a wise scheme for those who have the task of framing the rules to procure the opinions of all interested in the trade as to what will be the most feasible and fairest rules.

CONGESTION A BENEFIT

MANAGERS of shows have one thing to regret—that they have not double or triple the amount of exhibition space at their command that they have. Motor car shows are naturally for the purpose of advertising, no matter from what other standpoint they may be considered, and the pity is that New York and Chicago have not buildings that will permit each exhibitor having all the space he desires in order to make a display for the edification of the public and incidentally for his own benefit in a business way, just to see what the effect might be under such circumstances. But it is doubtful if the success that comes to the trade from motor car shows would be measured in such quantities through having unlimited show space as with that of a somewhat restricted quarters. Space is now at a premium and makers are compelled to vie

with one another in the quality of their wares rather than with the extent of their exhibits. The assignment of restricted space naturally brings about refinement in exhibits that might not be expected under other conditions; a certain amount of time can be devoted to making an exhibit and concentrated effort brings better results than when thinned out. The public may look forward to better shows during the coming winter than have been given before; there will be noticeable refinement all along the line; the improvement in design and finish and quality will appeal not only to the motorist of experience and to the tradesmen, but to those who attend shows though with no particular idea of becoming purchasers. All this will have its effect; it will prove good advertising for the motor car industry and the show with a premium on space will be held largely responsible for this state of affairs. The industry will not suffer because of this form of restraint put upon it; as a matter of fact, it will profit by it, for there will be a tendency to keep within rather than without legitimate trade bounds, which must be the life of the industry if kept on a legitimate basis.

INOOPORTUNE DATES

IT MAY well be asked for whose benefit are the Florida beach races prompted—the spectators, the makers, the railroads or the southern hotels? If they are designed to be of benefit to any one interest named, it would be a favor were the management to name the proposed beneficiary and to let the other interests know they are out of consideration. It might be suggested to the management of these races that if the motoring public is being considered, the time set for the races is such as to preclude the attendance of a large number of those connected with the motor car trade who might easily be induced to become not only spectators at the races but guests of the hotels and patrons of the railroads. The time set for the races is such that few connected with the trade can find time to spare a week for the sake of pleasure, inasmuch as their time is necessarily taken up with show matters. This situation must have been brought to the attention of the race management ere this; and if such is the case, and no attention has been paid to the matter as presented, it is natural to suggest that possibly the races are not conducted for those who might be termed fans but for other interests, which might be named if the management desired to have them known. Motor Age speaks primarily for those who are compelled to be in attendance at the Chicago show and this list includes most of those who have put in a hard week at the New York exhibition as well. The management of the beach races might have taken these facts into consideration in setting dates for the tournament, which has now become a fixture.



JUMP AND SPARKS

Should potatoes prove fuel producers for alcohol motors, the motor car ought to be popular in Ireland.

Six routes are offered for the Long Island motor highway. Evidently Senator Morgan has deserted the beach business.

Of course Senator Morgan never thought of the skidoo combination when he arranged twenty-three races for his Ormond beach meet.

If the two New York motor car shows turn out to be as hot rivals as their respective press agents would make it appear, something ought to be doing in the old burg during the coming winter.

It begins to look as if the French may give Americans credit for one original thing concerning motoring—the speedway scheme that is now in a state of incubation. All of which tends to show that the French are weakening.

Now we have it! The technical press men need worry no more about telling over and over at each approach of cold weather what anti-freezing solution to use. A spring has been found near Big Rapids, Mich., that furnishes non-freezable water. This might appear as a joke, but it isn't—according to the news story, at least.

According to government figures there were over 20,000 motor cars made in this country in 1904, representing something like \$28,000,000 in value. This appears to be going some, but when the 1905 and 1906 figures are at hand these people who howl about motorists and motor cars be-

ing nuisances will likely take long breaths and say they didn't know the industry was so great.

To England must be credited the honor of being the pioneer in the private motor highway game, but surely America will be a good place bet.

Now that the Florida beach race program has been announced, and the date of the tournament set, it will be proper for the railroads leading southward to tell their stories and the Florida hotels to sing



Senator Morgan draws up his card for Ormond-Daytona meet January 22-27 and announces twenty-three events; several changes in the management of races promised.

Maxwell two-cylinder car accomplishes feat of running 2,500 miles inside 7 days between Boston and Worcester without an engine stop, then continues to New York.

Charley Y. Knight drives Silent Knight in a post mortem run over Chicago-Cedar Lake course, improving economy test figures by 5 ounces.

Sensational times made in beach meet at Blackpool, England, in which the Darracq figures prominently; two world's records made.

Plans for motoring highway on Long Island progressing fast; every indication that the scheme will prove a success.

List of exhibitors for the Chicago show announced, showing 193 names; rivalry over decorations in New York.

Brasler adopts plan to avoid strikes by letting his employes share in the profits; features of 1907 Brasler.

Tour from Paris to Nice and return planned for curtain raiser to French show.



praises in their own behalf. In the meantime the cup makers will start their furnaces going.

Post mortems, in poker games, are not always so gratifying as was Knight's "it might have been."

Racing is all right in its way, but the Vanderbilt coterie hit the right nail on the head when it announced that the new Long Island road will be a motor highway, not a speedway.

Judging by the ease with which the Maxwell won the \$500 wager on the 2,500-miles-in-7-days-without-engine-stop proposition it's a risky thing betting against the modern motor car.

The Darracq scooped in the lion's share of the prizes at the Blackpool meet in England, which leads to the observation that America is not the only country to have its laurel bush stripped by France.

Talking about post mortems, it is more than probable that some of the makers who built cup racers for the American Vanderbilt trial are hoping Senator Morgan will put on that 300-mile race at Ormond.

The Maxwell test that has just ended is only another evidence of what a car can do—another clinching argument for the doubtful. Those who have been in the game expected the result, although a two-cylinder car has never made such a record. Pretty soon there will be nothing to argue about unless something harder in the way of a test can be discovered.

CENSUS BUREAU FIGURES ON AMERICAN MOTOR CAR INDUSTRY FOR 1904

Class	Number	Total	Value	Class	Number	Total	Value
RUNABOUTS—				VICTORIAS—			
Gasoline	10,000			Electric	66	66	77,740
Electric	455			STATION WAGONS—			
Steam	677	11,132	\$ 8,831,504	Electric	13	13	25,800
TOURING CARS—				LIGHT DELIVERY WAGONS—			
Gasoline	6,444			Gasoline	140		
Electric	39			Electric	109		
Steam	737	7,220	11,781,521	Steam	2	251	455,457
DOCTORS' CARS—				HEAVY DELIVERY WAGONS—			
Gasoline	1			Gasoline	55		
Electric	53	54	47,140	Electric	105	160	491,490
SURREYS—				OTHER DELIVERY WAGON TYPES—			
Gasoline	131			Gasoline	675		
Electric	45			Electric	330		
Steam	45	221	229,872	Steam	2	1,007	1,127,156
PHAETONS—						20,693	\$23,751,234
Gasoline	48			Cars made by other interests.....			879,205
Electric	1	49	69,450	Other products			2,042,777
STANHOPE—				Custom work and repairing.....			851,053
Gasoline	206			Motor cycles	2,295		354,130
Electric	209			Electric motors	1,819		152,685
Steam	105	520	614,104	Grand total value.....			\$28,081,084

NEW RECORDS ON SAND

English Beach Race Meet at Blackpool Results in Fast Times By Darracq Cars

London, Oct. 20—The Blackpool beach meet, run Friday and Saturday of last week, is described as having furnished the best set of motor car speed races ever seen in England. The course is right inside the limits of the town, being along the shore line; in fact, one of the thoroughfares. The first day the weather was bad, but on Saturday it is estimated that at least 100,000 people lined up on both sides of the course. As a result of the thirty-one events run off one world's record and one British mark were shattered, the former effort resulting in Lee Guinness, in a 200-horsepower eight-cylinder Darracq, doing a standing kilometer at the rate of 69.04 miles an hour and the flying kilometer at 106.52 miles an hour. In an 80-horsepower Darracq Huntley Walker did the standing mile in 54% seconds or 1% seconds inside Hanriot's world's time, made in a Clement-Bayard, for cars weighing up to 1,433 pounds.

Friday started off with two motorcycle events, the mile free-for-all being won in 1 minute 3/4 second by Guiponne on a 14-horsepower Peugeot. T. Rimmer, in a 14-horsepower Vulcan, took the standing mile for four-seated touring cars, the chassis price of which was not over \$1,500. He did the distance in 1 minute 37% seconds, defeating seven other cars. H. G. Day, in a 12-16-horsepower Clement-Talbot, won the same kind of a race in which \$2,250 chassis figured in 1 minute 26% seconds. Warwick Wright, in a 30-horsepower Darracq, scored in the event for \$3,250 chassis, while in the class for chassis over \$4,500 A. Rawlinson, in a 40-horsepower Darracq, was the star. Rawlinson also won the next event, a free-for-all, in 1 minute 2% seconds. The class for steam cars did not fill and was called off. The first day's sport wound up with the bus race, in which the monsters, each carrying twenty-two people, battled for supremacy, which was won by a 40-horsepower Darracq-Serpollet, no time being taken.

Guinness was the star of the second day, breaking the two records announced previously. It rained half the morning, but a cold northwest wind dried the course for the afternoon's sport. The first event was the one in which Huntley Walker made his record, then came the standing kilometer for four-cylinder racers not exceeding 2,250 pounds in weight, which was won by Warwick Wright in a 100-horsepower Darracq. Guinness took the next race, beating Cecil Edge and the Napier in the standing kilometer for multi-cylinder cars weighing up to 2,250 pounds. He did the distance in 32% seconds. Hutton in a Mercedes and Demogeot in a Darracq were the other starters. Walker in the Darracq scored in

54% seconds in the standing mile for the lightweights. In the event for four-cylinder racers weighing up to 2,250 pounds the Wright Darracq, Walker Darracq and Demogeot Darracq ran one, two, three, beating the Mercedes, Itala and de Dietrich. Wright's time was 51% seconds. In the standing mile for multi-cylinder cars weighing up to 2,250 pounds Guinness scored in the 200-horsepower Darracq, doing the mile in 45% seconds.

Then came races for the four-passenger touring cars. Thomas Rimmer, in a 14-horsepower Vulcan, won in the \$1,500 class in 1 minute 3% seconds; H. Ramoisy, in an 18-horsepower Germain, the \$2,250 class; Ralph Jackson, in a 40-45-horsepower Eagle, the \$3,250 class in 43% seconds, and A. Rawlinson, in a 40-horsepower Darracq, the class not exceeding \$4,500. All these events were at the flying kilometer. Rawlinson also won the free-for-all. The motor bus race was won by Leprossi's Darracq-Serpollet.

In the flying kilometer for racers not exceeding 1,433 pounds Walker, in the 80-horsepower Darracq, won in 30% seconds; Wright, in the 100-horsepower Darracq, took the event for racers not over 2,250 pounds in 26 seconds, a world's record. A. E. George, in an Argyll, won the standing mile handicap for racers weighing up to 2,250 pounds, while G. F. Heath, in a 20-35-horsepower Darracq, captured the standing mile handicap for Darracq touring cars carrying two passengers.

ON 3 WEEKS' TRIAL

London, Oct. 17—The 4,000 miles' trial of the new Straker-Squire G. S. B. 25-horsepower touring car was started yesterday under the auspices of the automobile club. An average distance of about 165 miles a day will be covered on main road routes from London and back, the car starting from the automobile club each morning and returning to the club garage in the evening. A little over 3 weeks—Sundays excluded—will be occupied in this trial. At the conclusion of the reliability trial, a speed test will be carried out on the Bexhill track. A trial of slow driving on top gear, showing the flexibility of the engine, and its suitability for town use, will also be made.

ENGLISH BUY THE C. G. V.

London, Oct. 20—Information reaches England that Charron, Girardot & Voigt, of Puteaux, Paris, have been acquired by a British syndicate, but who are handling the matter has not yet been divulged. This will be the second big French motor car firm to be acquired by English capitalists, for Darracq's are practically owned by the Harmsworths and Newnes, newspaper proprietors. It may be that the business has been bought for refutation, but that is doubtful. The C. G. V. is a very exclusive car and the company has no difficulty in getting a high price for every car produced, it is declared.

PARIS' NEW SHOW IDEA

Winter Tour to Nice and Return Planned To Prove General Utility of Motor Car

Paris, Oct. 19—This year again, for the benefit of the makers of touring cars exhibiting at the salon, a tour from Paris to Nice and return will be organized. This tour is to be reserved for the cars to be exhibited in the show, and the cars will start from Paris on November 25, to return to Paris on December 5. There will be stops at each of the principal towns en route and an exhibition of 3 days at Nice. The stages will be, of course, very easy and no speed will be allowed beyond 22 miles per hour. The object of the tour is, first of all, to prove to the public that the cars on show this year are not mere carpet models, but can and have actually taken the road and fulfil the modern conditions of a prolonged tour. The commission of concours of the French club, at the head of which is the indefatigable Marquis de Dion, sprung this project upon the club at short notice, but the idea has been well received by the public and also the club officials.

The makers had, of course, been previously sounded upon the matter, but all was kept pretty quiet until the matter was actually decided upon. The stages will be 160 miles in length per day and the speed exacted will be 22 miles as an average. The cars will be penalized one point for each minute they are late at the control points. The tour will mean that exhibits will have to be ready by November 25, 3 weeks before the salon doors are open, but on the return from Nice on December 5 there will be time to put finishing touches on before the car is placed in the stand.

The French public does not quite know how to take the attempt which is being made to organize what is called the auto concours to be held at the same time as the salon of the Automobile Club of France. This concours is to be held, according to the prospectus, in the glass houses of the city of Paris, where last year the annex of the French club was located. It will be remembered that this year, owing to the affluence of exhibitors, the annex to the salon will be held in the frame buildings on the Esplanade des Invalides. The proposed concours is not backed up by anyone influential and its origin and *raison d'être* appear to be somewhat of a mystery. It is, in fact, looked upon as a rival to the salon, and probably is likely to obtain the support of those who are discontented with their spaces at the salon. The technical press ridicules the innovation. All the same, Commissioner Rives, who is handling the salon arrangements, has issued a press announcement to the effect that the proposed concours has nothing in common with the official exhibition of the year.

Unless makers find something to approve of in the concours it is unlikely that it will amount to much. The prospectus will be issued just when the lots are being drawn for the stands in the grand palace. The side shows of the salon for this year are to be abolished. In past years there have been reserved in some of the rooms leading off the galleries space for exhibits which only in a remote sense can have anything to do with motoring and its accessory trades, such as new inventions and an artists' room. All these will be abandoned this year.

GERMANY'S BIG SHOW

Berlin, Oct. 22—From November 1 to 12 the annual show of cars and industrial motor applications will be held. This year's show is being held in a new exhibition hall, which has been specially built for the trade. The main front of the building is 660 feet long and has numerous entrances. The ground floor will be devoted to the exposition of complete cars. The parts and accessories are put upstairs on the galleries. The heavier commercial vans and omnibuses are accommodated outside, under large tents. The main entrance to the show is in the Hardenbergstrasse, which leads direct into the main hall. Just in the center of the large hall six of the largest makers will have stands—Daimler, Benz, Adler, Fahrzeugfabrik, Eisenach, Neue Automobil Gesellschaft and Opel. On the sides are found the stands of Renault Brothers, Beckmann, Maurer-Union, Hering, Richard, Norddeutsche Automobil-und Motoren Aktien-gesellsch. In the galleries are situated the tire people, accessory and incomplete machines. The Continental Tire Co. will have an effective stand, and the Peters-Union Harburg-Wien, Krupp, Excelsior and Dunlop stands will be prominent. In the second hall will be found Stoewer, Dürkopp, de Dietrich, Panhard-Levassor, etc. Here also will be the Fiat and Itala.

AUSTRALIAN CLIMB

Sydney, Australia, Sept. 25—The Automobile Club of Victoria has just held a successful hill-climb on a grade running out of Heidelberg, a distance of 1,050 yards, with the steepest gradient one in six and one-half. The cars were divided into classes—single-cylinder and multi-cylinder machines. The formula consisted of multiplying the cylinder dimensions by the time in seconds and dividing the product by the weight of the car with one passenger. In the multi-cylinder class W. C. Knight was first in a 10-horsepower de Dion, Sir Reginald Talbot was second in a 12-16-horsepower Talbot, and F. L. Klingender third in an 8-10-horsepower Humbert. In the single-cylinder class Dr. R. E. Weigall was first in a 6-horsepower de Dion, A. C. Hampton second and F. E. Fay third in the same kind of cars.

LABOR IS IN ON PROFITS

Brasier Thinks He Has Solved Problem by Giving Employees Interest in the Trading

Paris, Oct. 18—The 1906 strike has had the effect of waking up some of the largest motor car firms of France and in a very effective manner. In some cases the proprietors rely on their Constructors' Union, hoping to bring the men to subjection by severe measures if there is another strike. Others have sought to stem the tide of French socialism with which the men are supposed to be imbued by milder measures, stricter application to shop rules and a close watch on the laws of production. The Brasier company has chosen a very effective manner of dealing with the question, which, if not novel, is at all events a new feature in French factory policy. The staff and men in the Brasier works have now been given a direct interest in the year's trading. With the men there would, of course, be a difficulty in establishing an equitable division, so the firm sets aside from the year's profits a special fund to pay for bonuses to the skilled workers. The bonus bears a direct ratio to the profits of the firm and the plan is said to be working excellently. Among the more tangible rules of this establishment is that relating to the staff bonus. The draftsmen and engineers all benefit to a large extent by the firm's successful trading and the salaries are increased by a percentage derived from the number of chassis built by the firm. The engineers and draftsmen are all delighted with the way the plan works out and it is stated that a more contented lot than the Brasier equipment is rarely seen. So much for 1906. Now as regards 1907, Brasier has not seen fit to announce many changes in his 1906 construction.

The 1906 types have given satisfaction and with certain exceptions will be repeated for 1907, the changes being mostly in details. However there will be created a special 1907 car consisting of a 50-horsepower model, like the 25-horsepower, four-cylinder cars of this year. The 25-horsepower cars for 1907 will be only of four-cylinder type. The special 50-horsepower, six-cylinder motor will have the cylinders cast in pairs and for each group of two cylinders will be provided two exhaust openings and but one admission opening. This is a reversal of the 1906 policy, which consisted of furnishing two admissions and only one exhaust opening per group of two motors of the four-cylinder cars. This rule applies to the four and six-cylinder cars for 1907. A further change in construction will be made as regards the chassis. The 1906 chassis had parallel side bars; the chassis for 1907 will have side bars which are wider at the rear wheels than at the front axle. The difference is obtained by an outward turn

of the frame of the chassis, which is bent just back of the front wheels. The effect of this change is, of course, to allow a smaller turning radius of the car. The front wheels of the 1907 models will be of the same diameter as the rear wheels, this for the first time in the Brasier construction.

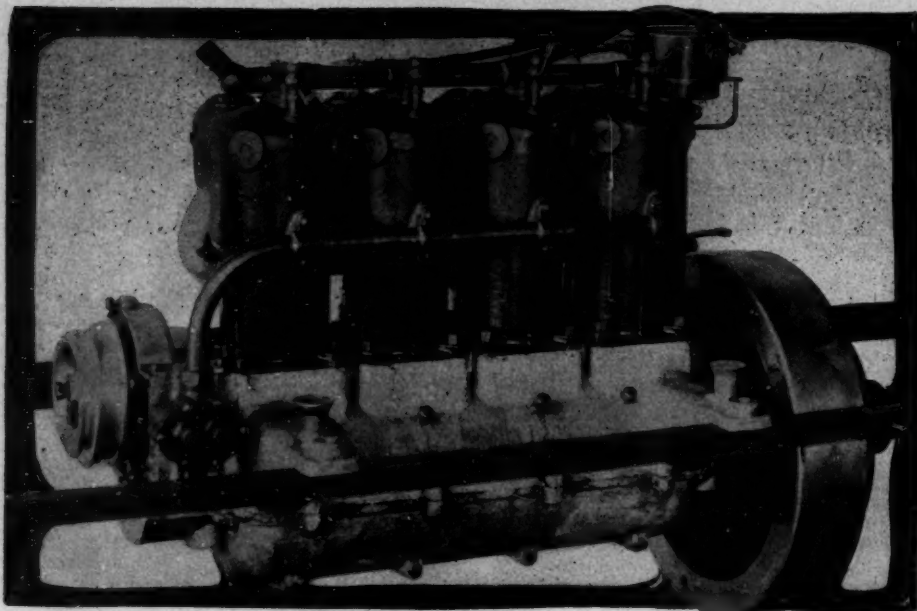
Perhaps the biggest change Brasier is making is in connection with the carbureter. This is to be modified in principle for all the 1907 cars. The water circulation around the carbureter is replaced by a circulation of hot air from the exhaust. In addition the additional air supply for the mixture is to be regulated automatically by means of a small piston throttling the air supply. Finally, the new carbureter is much smaller and lighter than the same capacity of 1906 carbureter. This new carbureter has been patented in France, although it has not yet been issued to Brasier.

NEW ENGLISH COURSE

London, Oct. 20—There is in course of construction at Weybridge, on the estate of H. F. Locke-King, a private motor racing track that will be used for speed contests. The track is to be a circular one of 3 miles 100 feet in width, and its construction will be an engineering feat of no mean order. A great part of it is being cut through a thick wood just below Mr. King's residence, and giant oak and elm trees are being uprooted, undergrowth cleared away and burned, ravines bridged or filled up and hills leveled or cut through. There will be only one slope in the track, and the rest of it will be perfectly level. It will be laid in cement, and the banking will be of such a height as to allow of racing at a maximum speed of 90 miles an hour. At one corner, on a hill 100 feet high, an elaborate home for the club which is to be formed, will be built, and from here a fine view of over 1 mile of the track will be obtained. All races are to finish in front of the clubhouse. The track will be situated among some of the loveliest scenery in Surrey, and for the greater part of its length will run through an avenue of fine old trees.

PARIS SHOW PRIZES

Paris, Oct. 16—The prizes offered at the Paris show include one for the best decorated stand of the show. The winner of this prize is excluded from competing in succeeding years in the same competition. Thus, as years roll on, there is an increasing number of stands which are hors concours. The committee fears that this will lead to these firms becoming laggards in the matter of stand decoration, and the beauty and charm of the show will thereupon disappear in great measure. It is proposed to institute another prize for those firms who have gained the first prize in previous years and which competition would not be open to the firms who have not obtained prizes before.



PULLMAN 20-HORSEPOWER MOTOR WITH SEPARATE CYLINDERS

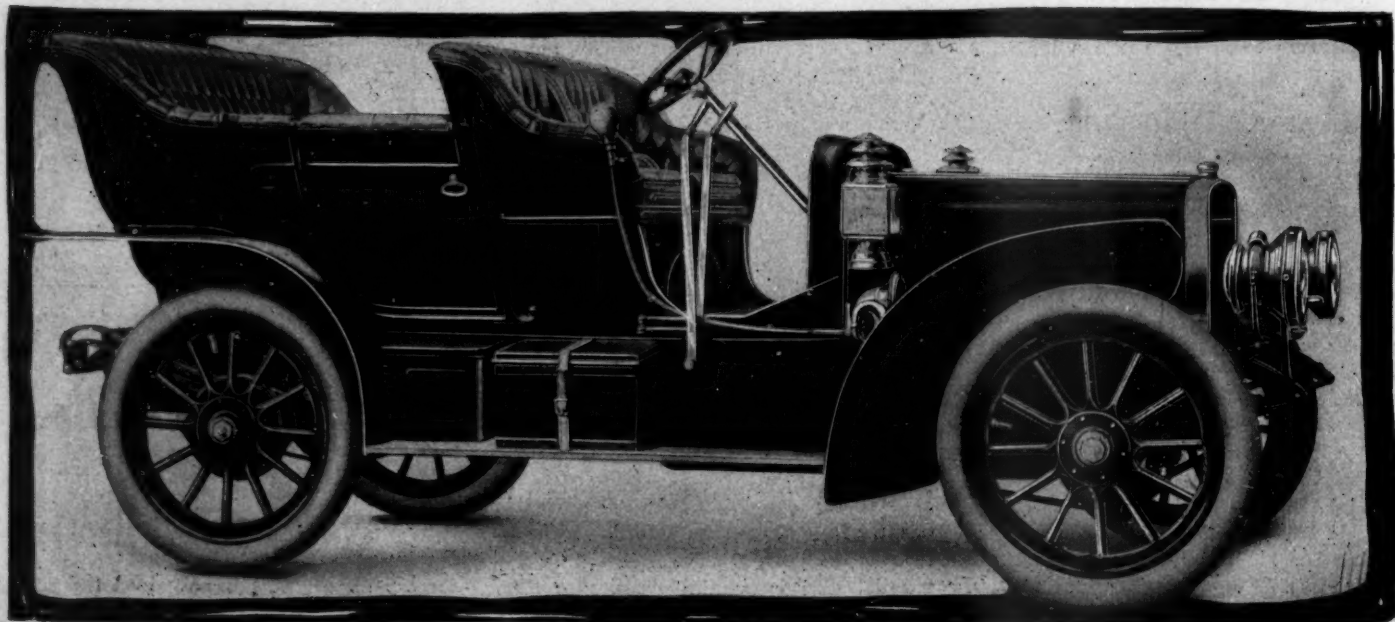
DEMAND for a medium weight, medium priced touring car has led the York Motor Car Co., of York, Pa., to include in its line of 1907 Pullman cars a machine of this status, weighing but slightly over 1,755 pounds, selling at little over the dollar-a-pound basis, furnishing carrying accommodation for five passengers and possessing 20 horsepower, 16 $\frac{1}{4}$ per cent in excess of 1 horsepower for every 100 pounds of car weight. Model E is the trade name bestowed upon this machine. The Pullman motor cars built by this house for the season just closing possess a few distinctive markings which do not appear in model E, but as to whether the other 1907 models will be minus these features is not at present announced. Foremost of these is the use of a continuous waterjacketing system for the four vertical cylinders, the adjacent sides of the waterjackets being

cut away so that when cylinder No. 1 is in place close against No. 2, its water-jacket space is in reality one with the first cylinder. Similarly attaching cylinders 3 and 4, the result is a continuous jacket from the first to the fourth cylinder, with the water entering one end and exiting from the other. Instead of this present scheme the new motor has a separate integral waterjacket for each of the four separately cast cylinders, with a standard water circulation system in which water enters near the base of the right side of each jacket and exits from the top center, passing direct through a return flow pipe to the top of the radiator. A gear water pump, carried on the forward left corner of the crankcase and gear-driven, insures the circulation. In connection with the water system can be mentioned the use of a new vertical tube radiator, with flat instead of round tubes,

PULLMAN

the argument in favor of the tubular change, as advanced by the company, being the lack of danger from expansion in case of freezing; with the flat tube the sides expanding more readily than those of the round type. Next in importance in the new motor is the changing of the ignition devices, the commutator now being carried on the top of a vertical shaft at the rear of the fourth cylinder, its top slightly above the cylinder head, permitting of working on it without danger of burning the hands on the hot cylinders. A novelty in the timer is the larger top or casing, to which the high tension wires are attached, which remains stationary when the spark is advanced or retarded. This is accomplished by shifting a cam on the shaft inside of the timer case. It will be recalled that in this year's models the commutator is on the rear end of a chain-driven shaft, lying horizontally over the top of the cylinder, this shaft serving to carry the current to the cylinders, eliminating the wire to each plug. Plugs are carried vertically in the caps above the valves instead of in the center of the cylinder head. The bore and stroke are 3 $\frac{3}{4}$ inches and cylinders and pistons are ground with a Herald cylinder grinder.

But a pause cannot be made here still more motor changes appear. Cylinders, still cast separately, differ from the present in that valves, intakes and exhausts are carried side by side in the bottom of ports on the right instead of located oppositely. In Model E this arrangement allows of one camshaft, carried within the crankcase, operating both sets of valves. The valves, as heretofore, are made interchangeable. A touch of novelty exists in the combination exhaust and intake, man-

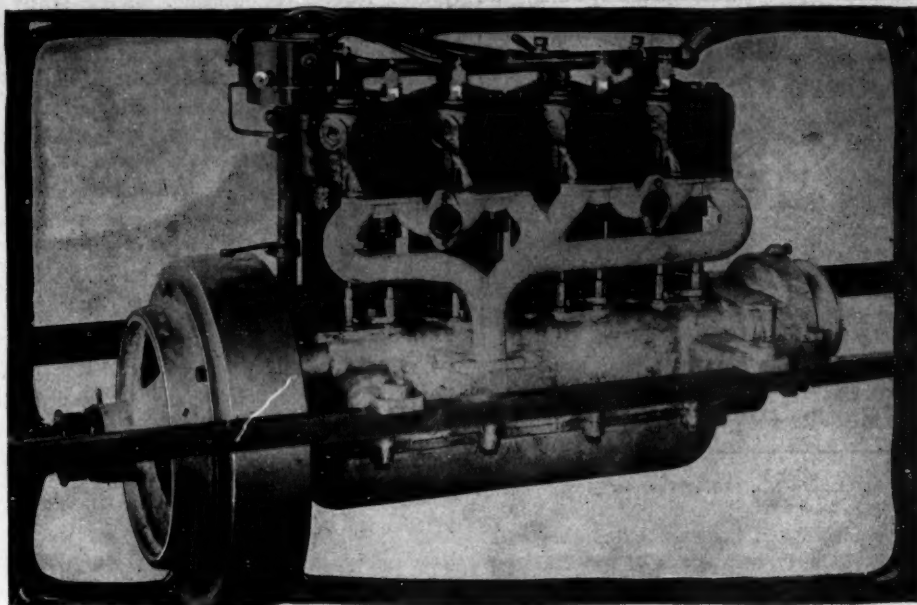


PULLMAN, 20-HORSEPOWER, LIGHT TOURING CAR FOR FIVE-PASSENGER ACCOMMODATION

MOTOR CAR

ifold for conducting the gases from and to the cylinders. The exhaust manifold, shown in position, is a one-piece casting with one branch from each cylinder, the branches from the end cylinders being very long, while those from the center cylinders are short and unite with the branch from the front cylinder at a point near its union with the branch from the rear cylinder.

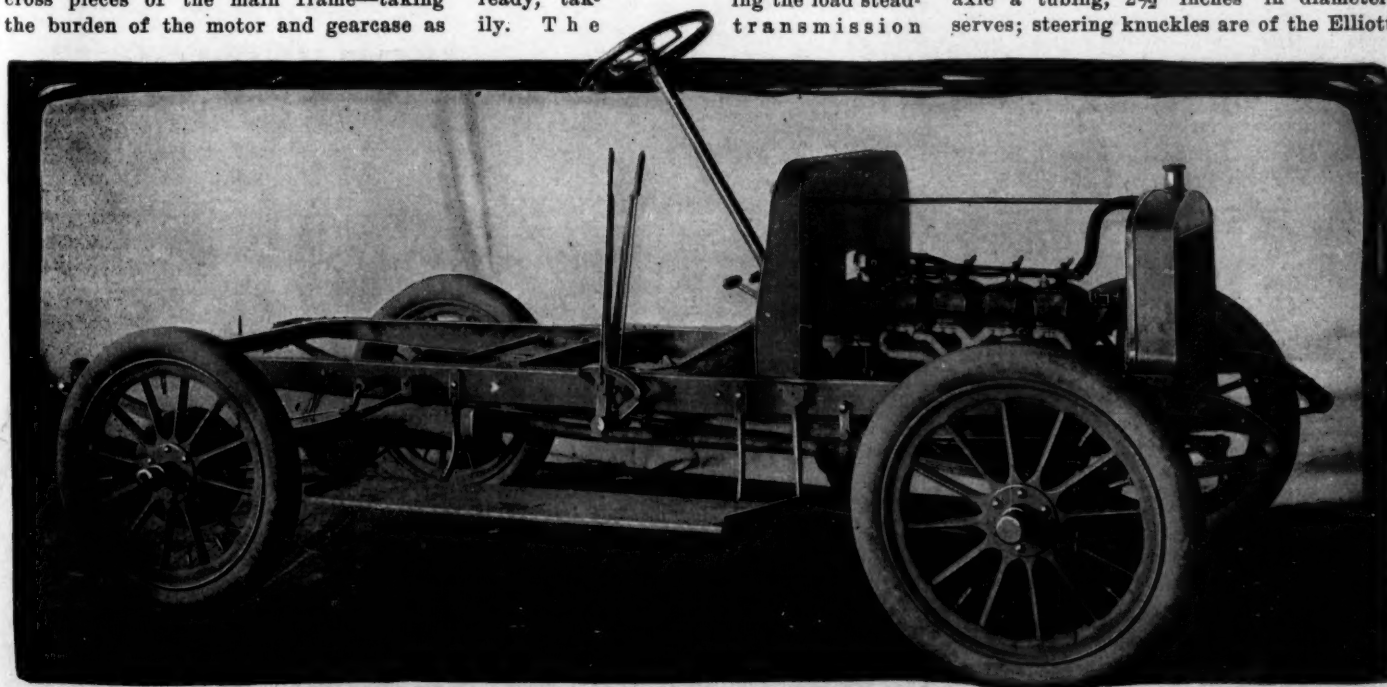
Formed integrally with this exhaust pipe scheme is a couple of Y pipes, one for the intake valves of the two front cylinders and the other for those of the back two. Those for the intakes do not extend to where the carbureter is carried but require the introduction of other pipes connecting them with the carbureter. The crankshaft, now a drop forging of high carbon steel, is supported on five bearings, one between each pair of adjacent cylinders and one at the front and rear. In these are bushings of Parsons white brass, a metal also used in the lower ends of the connecting rods but giving place to hard bronze in the top bearings of these rods. The crankcase, an aluminum casting made with an upper and lower half, supports the five crankshaft bearings from the former, the latter playing the role of an oil receptacle. Side inspection plates, so long deemed indispensable, are not used, while to reduce its cubical contents the case is considerably narrowed on top, each cylinder resting on what appears to be a rectangular chamber rising out of the top of the case, but which is in reality an integral part of the case. On the case are heavy arms for supporting the motor on the car subframe—a couple of channel pieces supported on cross pieces of the main frame—taking the burden of the motor and gearcase as



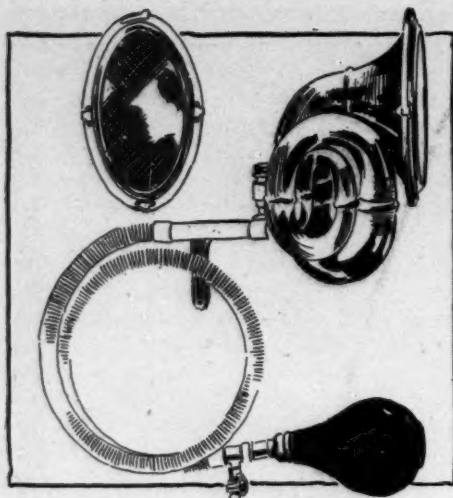
VALVE SIDE WITH COMPOUND INTAKE AND EXHAUST GAS PIPES

well, leaving the maker free to use but a 1½-inch offset of the main frame side pieces alongside of the motor, at which point, as well as where it is joined by cross pieces, reinforcement by gusset plates is made use of. Lubrication is by splash, fed direct from a force feed lubricator. The flywheel is cast iron with an inverted leather, cone-faced clutch with cast iron ring for the clutch bolted to the flywheel. The new feature employed in this ring is a slot sawed in L shape tapped in the corner to hold the cast iron 1/16-inch above the outside face. It is then turned to an angle of 12 degrees on the inside and by removing the screw and spring on the cast iron forces the piece down and projects 1/16-inch on the inside, and by letting the clutch in it engages on the four points that are made as mentioned already, taking the load steadily. The transmission

change is in the use of chrome nickel steel for all gears and shafts and the carrying of both shafts on ball bearings. In design the gearset is as at present, it offering three changes of speeds ahead with one for reversing, the changes being on the straight sliding gear principle. On direct drive the countershaft pinion being thrown out of mesh the shaft remains idle. Both change speed and emergency brake levers are of manganese bronze, carried well back towards the seat on the right end of the footboard. The driveshaft has universal joints at front and rear, and carries the emergency brake, the regular brakes being on the rear wheel hubs. Timken roller bearings carry the back axle, in connection with which axle are the 12-inch pedal brake drums, and adjustable spring seatings. For the front axle a tubing, 2½ inches in diameter, serves; steering knuckles are of the Elliott



STRIPPED CHASSIS OF PULLMAN LIGHT TOURING CAR WITH METAL DASH



MILLER'S NO. 19 LABASSOON HORN

type and Timken bearings carry the road wheels. The framework is of pressed carbon steel, hot-riveted throughout and carried on a set of four semi-elliptic springs, measuring 40 and 46 inches in length front and rear, respectively. The steering column is a hollow steel tubing, enclosed in a brass outer tubing, and has spark and throttle levers mounted on a semi-circle above the wheel. The gear is of the nut and screw type, with all parts subject to wear encased in oil-tight compartments and a top race of ball bearings with bearing adjustment. Wheels are 30 inches in diameter with $3\frac{1}{2}$ -inch tires.

The body, of bent wood, is fitted with individual front seats and a detachable tonneau, its 52-inch seat affording space for three passengers. Two bolts have to be taken out in removing the tonneau, which, when removed and a touring deck fitted, gives a neat runabout effect. The dash is of wood with a sheet steel covering. The new vertical radiator, already referred to, is said to stand the strain of several men standing on it without exhibiting evidences of strain at the many joints in it.

CADILLAC'S 1907 LINE

Four models comprise the Cadillac Motor Car Co.'s output from its Detroit home. The 10-horsepower runabout, model K, so favorably known, is marketed with full leather buggy top, rubber buggy top or full leather Victoria top and its general make-up is the same as at present except it will have 30-inch wheels with 3-inch tires. The body lines remain as at present. Following this is model M, a single-cylinder 10-horsepower light touring car, fitted with rubber, lined, cape cart top and offering a choice of straight line or victoria style of body, the latter the same as used in 1906. The four-cylinder line opens with model H, described in Motor Age, and lastly is the new 20-horsepower model G, with 4 by $4\frac{1}{2}$ -inch cylinders. The motor, like all Cadillacs, has separately-cast cylinders surrounded with copper waterjackets and fitted to it is the marine governor, jump spark ignition system and an automatic

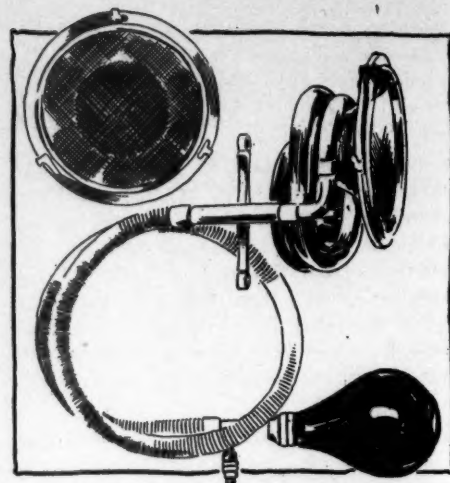
splash lubricating scheme. Drive is by shaft, through a selective type of sliding gear giving three speeds forward and one for reversing. This latter point is important, it marking the introduction of this able exponent of planetary gearset, the Cadillac company, into the realm of the sliding pinion style. The wheelbase measures 100 inches, wheels 32 inches in diameter carry $3\frac{1}{2}$ -inch tires with Midgley universal rims and the body finish is Brewster green, with black trimmings and running gear a couple of shades lighter.

ARC-SPARK PLUG

The Arc-Spark Mfg. Co., 13-21 Park Row, New York city, advances the claim in its new spark plug of having a construction which prevents sooting up. In accomplishing this the insulation E, which surrounds the positive electrode G, is made with a variable diameter toward its lower end within the threaded parts of the casing D, which threads into the cylinder. Having the last, or lowest expansion of the insulation, larger in diameter than the others, it prevents the particles of carbon, following an ignition, flying into the space between it and casing D. Structurally viewed the plug has the porcelain extending around the positive electrode from F to E; the nut collar C forms the plug casing, and the insulation retainer taking the form of a nut B. At F is a small slit in which the wire to the central electrode is inserted.

NEW GABRIEL HORN

Purchasers of the 1907 Gabriel horn will discover many changes in this popularly-known motor car signal, the paramount one being the use of a single tube instead of two, three, four, or more tubes, as at present. With the one tube, and it of medium size, the horn can be attached on the side of the body or beneath it entirely out of sight, not giving the pipe organ effect produced by an octave horn. To



MILLER'S NO. 16 LABASSOON HORN

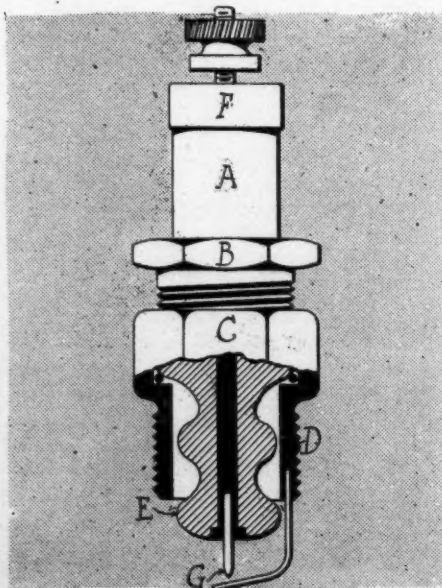
this can be added the fact of the single tube giving three tones only, produced by dividing the horn into three compartments, each producing one of the tones; and in this connection attention is directed to the new method of letting the exhaust gases into these three compartments, the rule being to first store the gases in a common chamber or reservoir from which they are distributed in due proportion to the three compartments. The horn is made for rapid disassembly, but a few moments sufficing for taking it apart to remove carbon deposits or other dirt. The horn is without reeds, bulbs or fragile tubes and its blast is as flexibly controlled as heretofore. A change made in the valve controlling the exhaust gases consists in having the valve with one-half the bearing surface of the 1906 valve in this wise offering less surface for carbon accumulations. The new cut-out valve, included in every Gabriel horn equipment, has all three openings of the same size permitting a free escape of exhaust gases. C. H. Foster, of the Gabriel Horn Mfg. Co., Cleveland, O., is the designer of the horn.

PACKARD RADIATOR CAP

Radiator caps, often obstinate in the extreme, offer constant difficulty in removal, the trouble consisting in gumming in position necessitating a pipe wrench to loosen them. To avoid such difficulties, the Packard Motor Co., Detroit, Mich., has anticipated this and has resorted to the simple device of filing a groove centrally across the top of the cap and setting a fin piece therein, the latter offering the leverage of a wrench, and incidentally adding to the radiator appearance.

NEW MILLER HORNS

Charles E. Miller, 97 Reade street, New York city, includes in his line of imported motor car horns for the approaching season a couple of new and distinctive models. The first of these, christened No. 19, and furnished in but one size, is an oval-shaped LaBassoon horn made from spun brass and polished. It has the triple coil producing a deeper than ordinary tone and carries with it an adjustable



ARC-SPARK PLUG

attaching bracket providing for easy attachment to any standard car with round or square-cornered dashes. The bulb, of French rubber, is chemically vulcanized and guaranteed. As a mate of this horn is a No. 16 horn of the same make, but furnished in three sizes, having as No. 19 a triple coil and stationary bracket. While similar to the No. 19 in many details it differs in the contour of the bell, so designed to occupy as little space as possible, the coils being placed around the bell part, making it possible for the largest of the three sizes to be carried in a space measuring 4 inches.

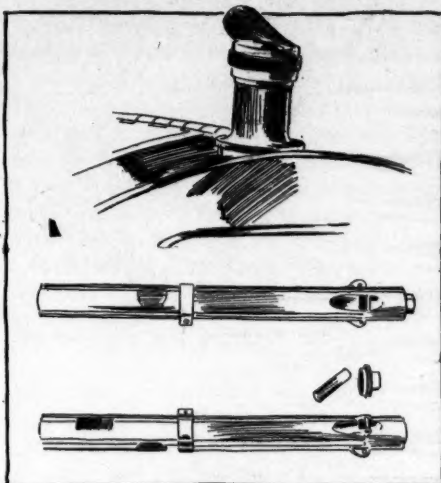
DIETZ'S 1907 LAMPS

The R. E. Dietz Co., New York city, for 1907 will discontinue its present styles of Peerless and bullet-shaped oil side lamps and will continue its Dainty side, Orient and Regal lamps in the flat back pattern only, made on the original cold blast principle. The company will also continue its Dainty tail lamp and No. 2 tail lamp. All of these will be of improved design. In addition to these the Dietz house has added its Sterling lamp, square type, specially adapted for limousines and landaulets, and also its Royal lamps for use on heavy cars. It will continue its present barrel type gas headlights and searchlights, and has added to this line its Imperial lamp, a parabolens light, so popular all this season. The concern has discontinued its present pattern of generators and will place on the market its No. 5 and No. 6 Handy generators, holding 2 and 5 pounds of carbide respectively.

STEEL WHEELS

Turner & Fish, Chicago, Ill., introduce a somewhat different method of increasing the width of their steel wheels for commercial car use; the necessity of wide rubber tires on this class of vehicles making it imperative to build a wheel with a broad flange, a broad flange requiring a thick wheel. In doing this four parts of the wheel must be noted: The hub of in-

PACKARD FINNED RADIATOR CAP



GABRIEL SINGLE TUBE HORN

creased radial thickness is very wide; each side of the wheel is a stamped steel disk with false spokes; and separating these disks are six U-shaped pieces interposed between the disks, the curved end of each resting on the hub and the spreading ends reaching to where the flange for carrying the tire is attached. Each U piece is of channel steel riveted to the wheel disks. The pleasure car wheel remains much as heretofore, being similar to the commercial wheel except that the hub is measurably smaller and the U steel pieces are not interposed between the disks, the latter having peripheral flanges offering sufficient width as a flange surface for carrying pneumatic or solid rubber tires. These disks are held together by two circles of rivets, one at the periphery and the other midway the periphery and the hub. There are no separators placed between these disks to increase the wheel's thickness.

MOTOR CAR LITERATURE

Munn & Co., 361 Broadway, New York city, have in their present catalogue of scientific and technical books a handy volume for those interested in the study of scientific motoring. The book contains a list of twenty-two volumes dealing expressly with motor cars and supplementing this are scores of other books that have a direct bearing on one or more of the many aspects of the motor car. The book is furnished gratis on request.

Those following closely the patent phase of motoring should secure a copy of the "Annual Report of the Commissioner of Patents for 1905," which has just been issued, from the government printing office, Washington, D. C. The patents granted are arranged alphabetically, together with the name of the patentee, the patent number, its date and its location in the monthly volume as well as in the official gazette. A similar list of the trade marks issued is included.

"Volume One of the Report of the Royal Commission on Motor Cars," from the press of the Wyman & Sons, Ltd., Fetter Lane, E. C., London, Eng., is a 75-page treatise of the findings of the Royal

Commission on the use of motor cars in Great Britain. The volume covers past and present car legislation, speed and driving, roads and dust, registration and construction, licensing and drivers, identification, heavy motor cars, motor cycles, offenses and penalties, special questions, taxation and revenue and conclusion. The report is very valuable in every detail.

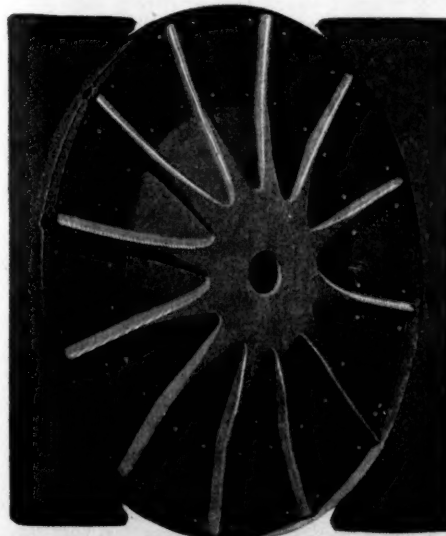
"The Motor Boat," by Fernand Forest and printed by H. Dunod and E. Pinat, Paris, is a French treatise on the construction and operation of motor boats. The first part is devoted to the historical aspect of the motor boat, the second to construction, the third to motors, fourth to ignition and last to propellers. The book contains 700 pages, many of which have line and half-tone illustrations of boats, motors and various boat parts.

The American School of Correspondence, Chicago, has issued a book entitled "Automobiles," by Charles E. Duryea. The book takes the form of instruction papers for motor car students and is a complete and logical treatment of the subject. It contains eighty-one pages, is cloth-bound, and at the back has a series of thirty-nine examination questions on the contents.

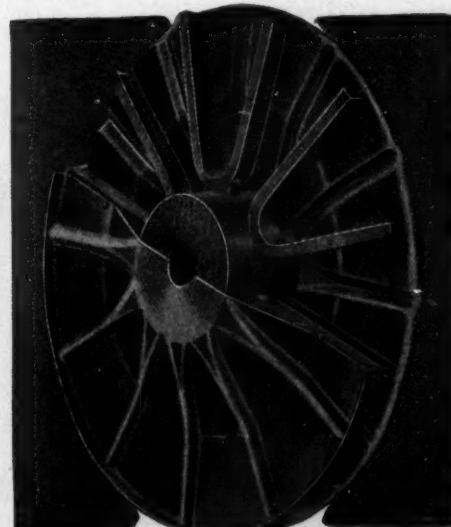
Under the title of "Put Up a Good Front" the London Auto Supply Co., Chicago, draws attention to its Lasco glass front or wind shields for motor cars. Four views tell the story of the glass front, as attached to large touring machines.

The Bartholomew Co., Peoria, Ill., maker of the Glide, has taken to music in popularizing the Glide cars, and is circulating a copy of sheet music known as "A Jolly Old Ride in a Glide." The words are by Ross Walker and music by Al Conigisky.

The P. M. Pursell Mfg. Co., Indianapolis, Ind., in a six-page folder, shows three of its styles of radiators, and in other illustrations demonstrates how the tubing is manipulated in making these coolers, and further includes one style of motor fan and one design of motor car bonnet. Brief information is included.



STEEL WHEEL FOR PLEASURE CARS



STEEL WHEEL FOR COMMERCIAL CARS

ADJUSTING AN AUTOMATIC CARBURETER

IT IS generally known that the non-automatic carbureter, which a few years ago was practically the only kind in use, gives a larger percentage of fuel as the velocity of the air stream is increased; consequently, unless provision is made to counteract this, such a carbureter makes a very weak mixture at low speeds and a rich mixture at high speeds, which is, if anything, the reverse of what is desired for satisfactory running. In order to give good service, therefore, such carbureters require to be provided with means for regulating the air inlet, or for admitting an auxiliary air stream to dilute the carbureted mixture. The object of the automatic carbureter is simply to perform one or the other of these functions automatically. In either case the result is the same. If there is only one air inlet, increasing its size admits more air and reduces the suction at the spray nozzle, and if there are two air inlets enlarging the inlet beyond the spray nozzle will dilute the carbureted stream and also reduce the suction at the spray nozzle. In either case the question is simply one of regulating the variable air inlet to produce a substantially constant proportion between the air and gasoline. As the principles of nearly all automatic carbureters are about the same, a single representative type, such as that shown in figure 2, may stand for the class, so far at least as the process of adjustment is concerned.

In the carbureter shown in figure 2 there are four adjustable elements which determine the proportions of the mixture: The needle valve controlling the opening at the spray nozzle; the size of the principal air intake; the spring governing the auxiliary air valve; the stop which limits the opening of this valve. Of course it is assumed the gasoline level in the float chamber is correct; i. e., that it is slightly below the top of the spray nozzle. It is also assumed the carbureter is of a size substantially conforming to the bore, stroke and speed of the engine on which it is used. If the carbureter is adapted to the engine it may be assumed the principal air intake will not need to be reduced; hence, for the time being, it will be left out of consideration. If the carbureter is too large for the engine it will be necessary to reduce this opening by putting in a plate with an opening of the proper size in order to produce the requisite suction

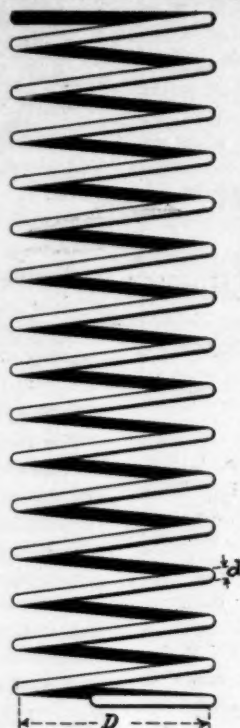


FIGURE 1



for spraying the gasoline efficiently.

As regards the other elements, the following principles will need to be borne in mind:

1—Increasing the opening of the needle valve does not effect automatic adjustment. If it feeds more gasoline at one speed it will feed more at all speeds.

2—Altering the diameter of the fixed air intake does not produce automatic adjustment. Its effect is essentially similar to that of altering the opening of the needle valve, a smaller air inlet increasing the richness of the mixture—all other adjustments remaining the same—because it increases the suction on the gasoline and likewise reduces the amount of air in the intake. The fixed air inlet is required to be small enough to give the suction necessary for spraying the gasoline when the velocity of the air stream is very low, as, for example, when starting the motor and when running the motor with the car standing still. The smaller the fixed air inlet the more easily the motor will start; but it is undesirable to have this inlet so small that the motor will not run throttled when the car is standing still without receiving additional air.

3—For the most satisfactory working conditions the auxiliary air valve—or whatever equivalent automatic device may be used for admitting additional air—should begin to open when the motor has reached the minimum speed at which it will drive the car under working conditions. This speed will probably be about 250 revolutions per minute, with the throttle nearly closed. Below that speed it is a matter of indifference if the mixture falls off somewhat in richness, since then the motor will be required to run only with the car standing still. Above that speed the auxiliary air valve should begin to open, gradually at first, and it should reach its full opening at the highest road speed of the motor with the throttle fully open. At this speed, or a trifle below this speed, it should come against the stop provided to prevent fluttering or excessive opening due to sudden changes of the throttle.

To determine the correct spring required

to adapt a carbureter perfectly to a particular motor will require careful and intelligent experimenting, and it may often happen that better results will be obtained by discarding the spring furnished with the carbureter and substituting another with more or fewer coils or heavier or lighter wire. As a rule, however, the purchaser of a carbureter will do best to acquaint himself fully with the working or adjustment of his carbureter with the spring furnished by the makers before attempting changes. To do this well he will need to attach the carbureter to his motor and make the various adjustments to the best advantage with as few radical changes as possible. In doing this it is best to assume that the air intake is the proper size until the contrary has been proved.

After the carbureter has been set up the needle valve controlling the spray nozzle should be first closed and then opened to an amount less than that specified by the makers in their instructions. This is better than opening it to the full extent specified, since it is a tedious job to scavenge a flooded carbureter of gasoline by cranking. Then set the throttle about a quarter open, retard the spark, prime the carbureter moderately, and crank the engine. If it fails to start the presumption is the carbureter was not primed sufficiently and the operation will have to be repeated. If it fails open the needle valve a trifle more. If the engine still refuses to start try holding two fingers over the air intake, thereby partly closing it while the engine is cranked. If the engine still fails to start either the carbureter has been flooded or something has been forgotten. If the carbureter has been flooded it must be scavenged by cranking the engine with the gasoline shut off at the tank. Occasionally an engine will start with the compression cocks closed when it will not start with them open. This is commonly due to the gasoline level being too low in the float chamber, owing to the float being improperly adjusted. If the engine is persistently hard to start it is well to investigate the gasoline level and if necessary alter the float adjustment, though this should be done with caution and the adjuster should know what he is about.

When the engine has once started it will probably stop after a few revolutions, indicating either that it is sucking too much gasoline from the spray nozzle or that the mixture was too weak and would run the engine only so long as the carbureter was freely primed. If the needle valve opening is a little less than instructions call for, probably the latter is the case, though a low gasoline level sometimes produces the same result. Try priming or holding two fingers over the air intake after the

engine starts, and see if this keeps it going. If it does, open the needle valve a little more; if not, reduce the needle valve.

When the engine consents to run continuously throttle it to a low speed—the car meanwhile standing still—and adjust the needle valve slightly to right or left until the engine is running as fast as it will without changing the spark and throttle. This indicates a correct mixture with the auxiliary valve closed. Now open the throttle about a third without advancing the spark. If the engine speed increases smartly the spring on the auxiliary valve is probably about right. If the engine responds sluggishly or if, as may happen, its speed immediately drops the automatic inlet valve is badly out of adjustment. If the speed drops, the chances are the engine is taking too much gasoline, which may be due to the valve stop being out of place or to one of two diametrically opposite maladjustments of the valve spring. If the spring is very much weaker than it should be it may have been open instead of closed, as it should have been, during the low speed adjustments, in which case it fails altogether to perform its automatic functions when the throttle is opened. If, on the other hand, the spring is much too stiff the valve may fail to open at all or to open as much as it should, in which case, again, the engine will get too much gasoline. Similarly, if the stop is not adjusted to let the valve open sufficiently the same effect will be produced. If the slowing down of the engine on opening the throttle is due to the mixture being too weak, the engine may stop or miss fire. If, on the other hand, it is due to too much gasoline, the explosions are likely to be regular but weak. If the auxiliary air valve can be reached, it may be pushed open with the finger to see if this helps the engine speed. If that cannot be done means can generally be found to slacken the tension of the valve spring while the engine is running, and when this is done and the stop can be readjusted if it has been taking too much gasoline, the engine will at once speed up.

With the engine running not more than 30 or 40 per cent above its road maximum, and the throttle reduced to whatever point is necessary to restrict the engine speed to that point, the tension of the valve spring should be changed until the engine runs its best, the spark, of course, being fully retarded. Now the throttle should be reduced again and the engine run moderately once more. It is wholly probable the new adjustment of the spring is incorrect for the lower speed. For example, it may be found the spring is now entirely relaxed, so that the valve opens at a much lower engine speed than it should, thereby making it difficult to start the engine. Or the spring may be too stiff to let the

valve open at all until the engine is well above its lowest working speed. This brings us to the question of spring proportion, since it is evident that something more than a simple change in tension is required to cause the auxiliary valve to open to the proper extent for all conditions. This matter of spring design is apt to confuse the amateur as soon as he attempts a departure from the spring already in his carbureter. The principles involved, however, are quite simple. They may be stated as follows:

1—Until its elastic limit is approached, the compression or extension of any spring is proportional to its load. If a coil spring such as that shown in figure 1 compresses $\frac{1}{4}$ inch under a load of 3 ounces, it will compress $\frac{1}{2}$ inch under a load of 6 ounces, and so on.

2—The compression or extension of a spring is proportional to the number of turns. A spring having twelve turns of a given diameter and gauge will deflect under a given load twice as much as a spring otherwise similar but having only six turns. The load deflects each coil to a certain extent and this deflection is multiplied by the number of coils or turns. This principle is often misunderstood and should be carefully studied and remembered.

3—The compression or extension of the spring is proportional to the third power of the diameter of the coil, measured from center to center of the wire.

4—The compression or extension is inversely proportional to the fourth power of the diameter of the wire.

Expressed in a formula, the deflection E per coil of a spring is

$$E = \frac{D^3 \times W}{d^4 \times C}$$

in which D is the diameter of the coil—see figure 1— W is the load, d is the diameter of the wire, C is a constant, chosen

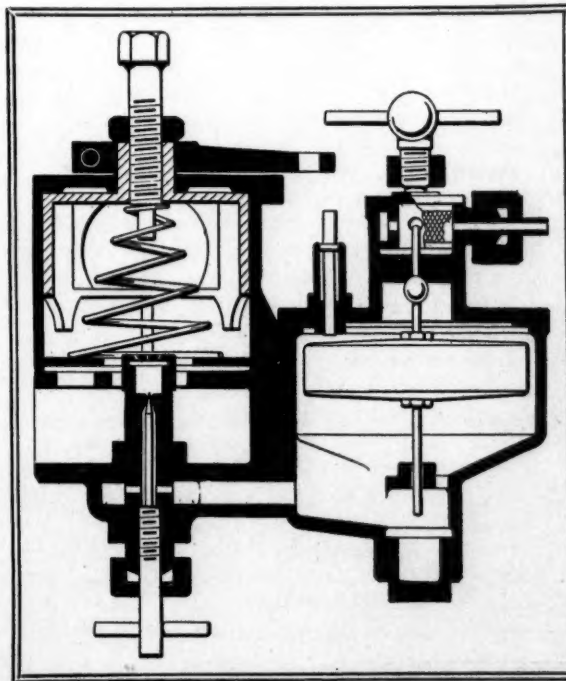
according to the units of length and weight employed.

Unless the spring furnished with the carbureter is radically wrong it will be unnecessary to consider changes in the diameter of the coil or in the gauge of the wire, although occasionally a change of gauge may be necessary. Ordinarily we may confine ourselves to consideration of the number of turns in the spring and the compression or extension—usually the former—which the spring is to undergo between the open and closed positions of the valve. It will be assumed the proper lift of the valve is determined by other conditions than the character of the spring, so that only its movement between its seat and its stop needs to be considered.

As indicated above a given load will produce a given deflection in a single turn of the spring, and this deflection is proportional to the load up to the point where the spring receives a permanent set. If the valve were to always stay shut, a spring of a single coil would be sufficient to produce the necessary tension against the valve. Such a spring, however, would be altogether useless as soon as the valve opened, on account of the excessive deflection imposed on it. As the spring tension against the valve is balanced against the vacuum existing in the carbureter, it follows that that vacuum determines the maximum permissible deflection of a single coil, and this must be multiplied as necessary by adding coils until the total deflection equals the lift of the valve, plus the initial compression of the spring when the valve is closed. When the proper number of turns in the spring has been determined the spring may be stretched or compressed as necessary to bring it to the proper length to be acted on by the valve. In practice such springs when made for experimental purposes are most readily produced by winding them on a mandrel

in a lathe with the turns spaced close together, and stretching the spring afterward to the required extent.

To understand the application of the foregoing principles to the selection of springs let us suppose a few representative cases. Suppose we have a spring of eight turns, whose length when free is $1\frac{1}{2}$ inches. Suppose that in the carbureter as it stands this spring is compressed $\frac{1}{4}$ inch when the valve is closed, and that the lift of the valve is $\frac{1}{4}$ inch. This means that when the valve is closed the spring is deflected 1.64 inch per coil, and that when the valve is open the deflection and tension are multiplied by 3. Suppose that the spring is found to be weak at high speeds. Evidently to simply stretch it will make it too stiff at low speeds. It is therefore necessary to stretch it and then cut off one or more coils. If this is properly done the deflection per coil when the valve is closed will remain unchanged, but the deflection



ADJUSTING AN AUTOMATIC CARBURETER—FIGURE 2

when the valve is open will be divided among a smaller number of coils, and therefore it and the resulting tension will be increased. Suppose we cut off three coils, leaving five. The deflection with the valve closed must remain $1/64$ -inch per coil, which will be the case if we stretch the spring to a length of

$$5/64 + 1\% =$$

because $5/64$ is the required deflection and 1% is the length of the spring when the valve is closed. The spring is now $1\ 29/64$ inches long and its total deflection when the valve is open is

$$5/64 + 1/4 = 21/64 \text{ inch,}$$

which is divided between five coils, making $4.2/64$ per coil, as against $3/64$ in the first instance, with a corresponding increase in tension.

Suppose that the same spring first supposed is found to be too stiff at high speeds. Another spring must be wound of the same diameter and wire, but with a greater number of turns spaced closer together. Suppose that four turns are added; the free length of the spring will now require to be

$$12/8 \times 1/8 + 1\% = 1\ 9/16$$

The total deflection will be

$$3/16 + 1/4 = 7/16$$

which is divided between 12 coils, making $2.33/64$ per coil as against $3/64$ formerly. Suppose that the same spring, instead of being correct at low speeds and wrong at high speeds, is found to be right at high speeds and too stiff at low speeds. This means that the variation in tension between the open and shut positions of the valve is not sufficient. Some turns must be cut off, and the spring stretched to restore the first conditions at high speeds. Suppose we cut off two coils. This shortens the spring to $1\ 1/8$ inches. The total deflection now required is

$$6/8 \times 1/8 = 9/32 \text{ inch.}$$

Therefore, the spring must be stretched to measure $1\ 1/8$ —its length when compressed— $+9/32 = 1\ 13/32$ inch free. Now the deflection with the valve closed will be $1\ 13/32 - 1\ 1/8 = 1/32$. In all probability this is too great a change, as there is prac-

tically no spring tension exerted when the valve is closed. Suppose only one coil has been cut off; the free length of the spring will require to be

$$1\ 1/8 + 1/8 \times 1/8 = 1\ 29/64.$$

Now the deflection with the valve closed will be

$$1\ 29/64 - 1\ 1/8 = 5/64,$$

which is divided between seven coils, as against $8/64$ divided between eight coils in the first case. The ratio between the new and old tensions will then be 5:7 with the valve closed.

Suppose finally the same spring is right for high speeds and weak for low speeds. It must have an additional number of coils to reduce the difference between the maximum and minimum tension. Suppose two coils are added. The maximum deflection now necessary for the same maximum tension is

$$10/8 \times 1/8 = 15/32$$

therefore, the free length of the spring will be

$$1\ 1/8 + 15/32 = 1\ 19/32.$$

The deflection with the valve closed will now be

$$1\ 19/32 - 1\ 1/8 = 7/32$$

as against $1/8$ inch before; consequently, the ratio of tension of the new spring to that of the old spring when the valve is closed will be 7:4.

The foregoing analysis will seem very much like hair splitting to the average user, and so it is, so long as one is satisfied simply to have his car run and not break down. Nevertheless, some such delicate experimenting is necessary if one would get the best possible results from his engine, and it shows clearly how delicate an instrument the carburetor is and why persistent tinkering will often show results of quite unlooked-for excellence.

Although strictly speaking there is only one needle valve adjustment that will give

the best possible results—and when once that adjustment has been found some regulation should be had for modifying the spring—nevertheless it is simpler to regulate the mixture by adjusting this needle valve, and varying the spring tension either by an adjusting screw provided for the purpose or by taking the spring out and stretching or squeezing it. By these operations, supplemented with suitable modifications of the fixed air inlet, very fair results within limits may be obtained, and it is in this way that ordinary carburetor adjustments are made. To understand the process it is necessary to bear the following principles in mind:

A—To obtain a weaker mixture at high speeds, the tension of the spring on the auxiliary valve must be increased, because a given increase in the tension of the spring, for example an ounce, is added to its tension for both the closed and open positions of the valve, and the percentage of increase is greater for the closed than for the open position. This gives a richer mixture at all speeds, but a greater degree of richness at low speeds than at high speeds; consequently, after stretching the spring or screwing up the adjusting screw, the next step is to reduce the opening at the spray nozzle or to enlarge the fixed air inlet until the mixture is correct at low speeds, when of course it will be weaker than before at high speeds.

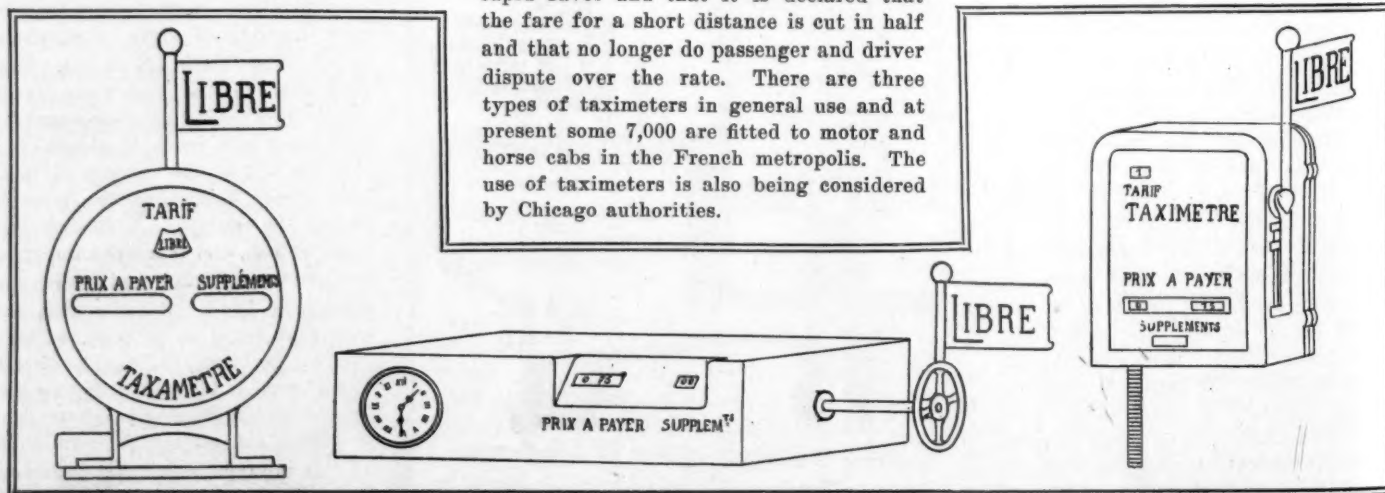
B—For richer mixture at high speeds the procedure is substantially the reverse of the above. The spring must be relaxed, thereby admitting more air, but proportionately more at low than at high speeds; and the needle valve must be opened or the fixed air inlet reduced till equilibrium at low speeds is restored.

C—For a richer mixture at low speeds, proceed exactly as for a weaker mixture at high speeds—paragraph A. The only difference between this and the first case will be in the degree to which the adjustments are carried.

D—For a weaker mixture at low speeds, proceed as in paragraph B, modifying the proportions until the proper result is obtained.

FOREIGN TAXIMETERS

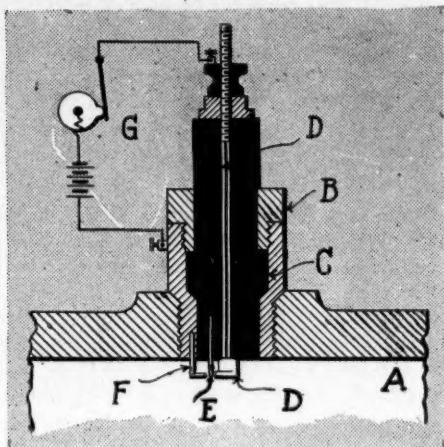
Efforts now being made in New York to compel cab drivers to equip their rigs with taximeters calls attention to the fact that in Paris the device is meeting with rapid favor and that it is declared that the fare for a short distance is cut in half and that no longer do passenger and driver dispute over the rate. There are three types of taximeters in general use and at present some 7,000 are fitted to motor and horse cabs in the French metropolis. The use of taximeters is also being considered by Chicago authorities.



THREE DESIGNS OF TAXIMETERS THAT ARE BEING USED ON PUBLIC CONVEYANCES IN PARIS



CURRENT MOTOR CAR PATENTS



THREE-ELECTRODE PLUG

Solid Rubber Tire—No. 834,015, dated October 23; to A. H. Marks, Akron, O.—Three parts comprise this tire—a D-shaped tread part A of resilient rubber; a base portion B reposing on the wheel rim and formed of firmer and less resilient rubber containing in it several plies of open work metal, and a middle part C composed of less resilient rubber, which is vulcanized between the tread and base parts holding them together.

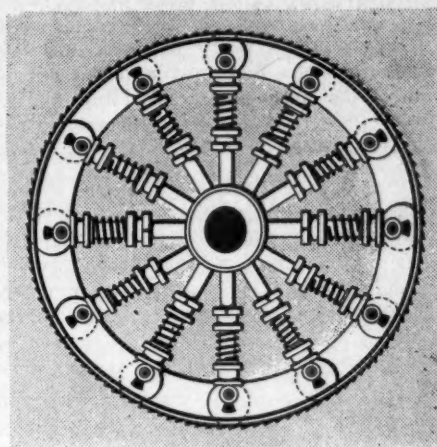
Air Brake—No. 833,992, dated October 23; to A. Winton and H. B. Anderson, Cleveland, O.—A portion of the motor crankshaft is shown with an offset A, to which is attached a piston working in a cylinder, B, for the purpose of compressing air, which is later conducted to a pressure tank C, thence to another cylinder, F, in which operates a piston connected with expanding members working against a brake drum E. When air is admitted to the cylinder F its piston is moved upwards against a spring tension clamping the brake into action. To regulate this brake pressure a push button K, in the floor of the car, serves to operate a system of valves housed in a casing H, which system so works that with pressure on K air is admitted to the cylinder F, enforcing

the brake. Upon being released a spring and diaphragm arrangement in H frees the air from the cylinder F and the brake action is relinquished.

Spring Spokes—No. 833,828, dated October 23; to A. Ellis, Augusta, Ga.—Attached to the wheel hub is a series of twelve rigid radiating spokes, none of which has rigid connection with the wheel felloe. On the outer ends of these spokes are threaded nuts which serve as adjustable seatings for coil springs that have at their outer ends connections with twelve jointed segments forming the felloe of the wheel. The flexible spring connections between the spokes and the rim absorb the vibration and permit of using hard rubber or metal tires in place of pneumatic tires.

Steering Gear—No. 833,718, dated October 16; to M. Harvey, Philadelphia, Pa.—Patented in this invention is the method of connecting the short tubular shaft carrying the worm in the steering gear with the tubular column, on the top of which is mounted the steering wheel. The worm has its lower end journaled into the case and the upper end considerably extended and ended with a double slot. Fitting into this slotted portion is the correspondingly slotted lower end of the steering column, and to anchor both together locking pins and a surrounding sleeve with locking keys are resorted to.

Motor Chair—No. 834,007, dated October 23; to M. Fischer, Zurich, Switzerland—This patent has reference to a motor chair for carrying one person. The chair has four small-diameter, pneumatic-tired road wheels with a framework suspended beneath the axles. The motor, one cylinder, air cooled, is carried vertically in front of the forward axle; the driver sits in a reclining-backed seat over the rear axle with his feet resting in supports on the front axle, the steering being done by the feet. A set of full-elliptic springs support the seat and control of the motor is from the side of the seat. The drive from the

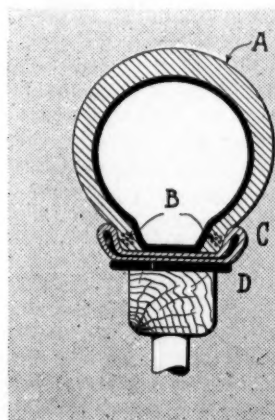


ELLIS SPRING WHEEL

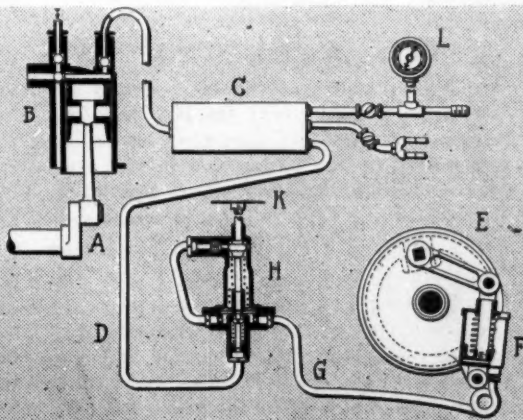
motor to the back axle is direct by single chain. For variation of speeds a planetary gearset is used.

Spring Tire Seating—No. 833,981, dated October 23; to C. S. Scott, Cadiz, O.—In this pneumatic tire the casing, A, has its lips, B, formed of inextensible, non-stretchable-selvages of wire tape, which are contained within a spring-retaining flange with hooks C. This flange in turn rests on a supporting bed piece, D, removably carried on the wheel rim.

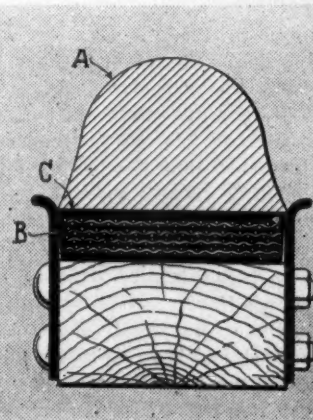
Three-Electrode Plug—No. 834,179, dated October 23; to D. W. Wilson, New Bedford, Mass.—Into the cylinder head, A, threads a plug casing, B, containing an insulation tube, C, passing through the center of which is one of the electrodes, D, which, at its inner end, projects into the combustion chamber. In the base of the insulation is a short electrode, E, and projecting from the metal casing, B, is a third electrode F, all three of these electrodes being in series with the current. G indicates the current producer, the interrupting mechanisms and the connecting wires with the top of the electrode D and also with the casing B, and, through it, to the electrode F. The electrode E takes its place midway between electrodes D and F.



SCOTT'S TIRE SEATING



ANDERSON'S AIR SYSTEM



MARKS' SOLID TIRE



LEGAL LIGHTS AND SIDE LIGHTS



MISDEMEANOR, NOT FELONY

The supreme court of Massachusetts holds that the fact that a motor car in which the defendant was riding at the time he was charged with operating it at an excessive rate of speed was registered with the Massachusetts highway commission by defendant, and in his own name, warranted a finding that he was the general owner thereof, or that he had such a special property in it as to give him control thereof under a law requiring motor cars to be registered "by the owner or person in control thereof." The case holds that the offense of driving a motor car at an excessive rate of speed is a misdemeanor and not a felony. The court also holds that proof that the motor car, which was registered in the owner's name, was being run by the operator at an illegal speed while defendant was in the tonneau, established prima facie that defendant, having power to control the machine, either knew or allowed it to be illegally run, and was therefore guilty.

The court of civil appeals of Texas has held that one who, while a guest of those hiring a motor car and not in a position to give orders as to the speed, is injured through being thrown from the car as a result of the negligence of the driver of the owner in charge, he is not barred by the acts and the language of other persons in the machine in requesting the maintenance of a high rate of speed.

DISTRICT IS AROUSED

The club rooms of the Automobile Club of Washington, of Washington, D. C., were thronged with members a week ago last Tuesday night as the result of a call to take some action against the outrages that have been perpetrated on motorists by the town authorities of Glen Echo, on the conduit road. Attorney Fulton, representing Colonel M. A. Winter, one of the club's members, who was arrested for apparently no tangible reason, was given the privilege of the floor, pointing out that Glen Echo was a municipality that had been granted a charter by the state of Maryland in 1904. Under its charter it has absolutely no authority over the conduit road which passes through its confines. It thus undertakes to police a road over which it has no jurisdiction. He stated further that Constable Collins had been making arrests without warrant of law and that charges against him had been preferred to the city council. He is accused of being totally unfit to hold his present position. Attorney Fulton then took up the Maryland motor car law, which he claims is so unreasonable in its provisions that he doubted if any court would sustain it. Under the law of 1904 a motorist was required to show only one

tag issued by the state. Under the law of 1906 two tags must be displayed, one in front of the car and one in the rear; but by the previous law of 1904. Because he had only the tag issued in 1904, Colonel Winter was arrested by Constable Collins while proceeding through Glen Echo at a very slow rate of speed, a revolver being thrust into his face to enforce the constable's demand. A resolution was passed authorizing the president of the club to appoint a committee of three, which shall constitute the legal committee of the club, and which shall particularly look into the Glen Echo outrages. A mass meeting was held later to protest against the actions of the authorities of Glen Echo, which was well attended and which decided to probe the matter to the bottom.

TROLLEY OBEYS THE LAW

An order has been issued by Assistant Superintendent James Nash, of the Boston-Worcester air line, a high-speed electric railway, to all the motormen on the road that in future the speed laws of Massachusetts and of every township through which the road passes must be respected to the letter. He further orders that no time must be made up hereafter at the expense of the speed laws. Some of the towns through which the line passes restrict the running of electric cars to the same rate of speed as motor cars. He further stated that arrests would follow violations of the speed laws in the aristocratic town of Southboro, Mass., the home of the former ambassador to England, Joseph Choate. These orders have had their effect on the running time of the road, so that patrons are unable to tell when a car will arrive or start. Another running schedule will be arranged and more time allowed for the run, because nearly every car loses a few minutes which now cannot be made up by speeding. The distance between the two cities is 45 miles by electric railway. The running time is 2¼ hours. The state law is 20 miles an hour. Therefore the law is being complied with by the trolley cars.

INDIVIDUAL LICENSES ONLY

The supreme court of New Hampshire has decided that under the law requiring all motor cars and motor cycles to be registered by the owner or person in control and prohibiting any person from operating such a vehicle until he shall first have obtained a license, a corporation or partnership owning a vehicle within the statute should register it in the corporate or firm name, but the license is not to issue to the corporation or firm as such, it being personal to the operator. The court holds that a traction engine used to draw cars is within the law requiring a license.

TROUBLE OVER TAGS

Violators of the Iowa motor car law are causing the office of the secretary of state much trouble. There are about 500 machines in the state that are not registered at all. Those that are registered are continually getting mixed up by the owner selling the machine without notifying the secretary of state or by losing part of his number. The law requires that the number shall go with the machine, but requires that if a person buys a car that is already registered he must again register it for that number the same as if he had registered for the first time. But motorists pay little attention to that provision and there is a good number of the 2,700 machines in the state that are changing hands every little while. The motorist seems to think that a machine having once been numbered there is nothing more to do when he buys an old vehicle. Now and then a car will lose a figure or two off the tag, but the owner fails to have it replaced. This is contrary to law, which places the owner of the car liable to a fine of from \$25 to \$50 or 30 days in jail. The penalty for failing to register is the same. Many owners when buying new machines take the number off the old ones and put it on the new models. This plays havoc with the state records. The motorist who does this is liable to the same penalty. There is no officer in Iowa to look after the cars, but the secretary of state is becoming aroused over the negligence of the owners and the coming session of the legislature will endeavor to have the laws amended and an officer appointed who can enforce them.

WHO PAYS FOR CAR?

Controller Metz, of Brooklyn, has requested an opinion from Corporation Counsel Ellison relative to whether or not the city should pay for certain automobiles bought by President Coler, of Brooklyn. As a result the opinion of the counsel has been returned to him with a request that it be reconsidered and if possible modified. The corporation counsel has based his opinion upon section 1554 of the charter, which provides that no department may buy any patented article without the consent of the board of estimates and apportionment. Under this ruling a rubber stamp cannot be bought for any bureau, if it is patented, without the approval first of that board. In the matter of the runabouts purchased by Mr. Coler, the corporation counsel holds that the city is, under the article cited, in no way bound to pay. The machines are patented articles. Only Mr. Coler personally may be held for the payment for the machines. The matter has not yet been settled and Mr. Coler has not been heard from.



ON AMERICAN STEEL

Reading, Pa.—Editor Motor Age—We are interested in two rather contradictory statements in your valued paper of October 11. On page 20 and contained in a rather general review of the characters of the various cars, a literal quotation is given of a statement made by an American builder: "This statement coming from the maker of one of the best-known American machines carries weight, particularly so as each season engineering representatives of this house make annual inspection tours of the European factories looking for everything latest in design as well as the most improved methods of workmanship. 'We do not put as good material in as do the French, Germans and Italians. We cannot buy the grades of material that the Frenchman, the German and Italian use; our steel trust does not make such high-grade products. Racing cars are American throughout; in them we cannot use foreign metal.'" On page 63 and contained in the advertisement of a concern ranking with the best in this country in the character of its product and the price that it gets for it, the following statement is made: "There is no reason why an American concern with experience in the manufacture of high-grade mechanical products cannot produce an automobile superior to any other in the world. The idea that better steel or material can be obtained abroad is erroneous. American firms can and do produce wonderful grades of steel, which can be obtained if manufacturers are willing to pay the price for the product." The first of the statements is anonymous, the second bears the subscription of a first-class concern. The first impresses us as being an expiring wail caused by the loss of all hope by this unfortunate maker of such high-grade products as he saw his car or cars made of "steel trust" material such as ordinary Bessemer steel, boiler plate, Bessemer carriage spring steel, rail stock, etc., hopelessly left behind; the second bears the dignified imprint of a concern that has "sought and found." It strikes us, and the fact is so well known that it is hardly necessary to make the statement, that there are two or three concerns in America that have honestly endeavored to improve the character of the materials used so largely in motor construction. To say that some of these concerns are producing steels that excel under all conditions the best material produced abroad, is not magnifying the results. Most of these high-grade foreign steels that this unfortunate manufacturer regretted so deeply that he could not use in his car cost less than our own high-grade steels; yet the trade to these two or three steel makers producing these high-grade steels is increasing every day. It is very strange

that the American manufacturer should pay more money for American product than the fine foreign grades can be imported for; yet this is the case. As a matter of fact the situation is probably this: This "prominent manufacturer" has been solicited times innumerable by representatives of our own concern and our few contemporaries doing the same class of work, with no result. He has probably plumed himself that his car is the highest grade that could be made out of "steel trust" material such as rail stock, boiler plate and Bessemer machinery steel and was satisfied to rest on the information secured by those representatives who scoured the foreign markets for information, passing by better articles within a few miles of his own factory. If he has given an audience at all to representatives of our concern or these other concerns the chances are that the reasons that he did not buy these high-grade steels has been simply the question of price; while the reasons that he has given have been undoubtedly either that the steels cost too much money, or that the material that he was then using was good enough, or that it took too long to get the high-priced steels when ordered. In justice to the steel makers above referred to, including ourselves, we think that it is due us that this broad general statement should be refuted and in doing so that the refutation be afforded as prominent a position as the original statement which occasions the writing of this letter. We know positively that the principal forgings, axles, crankshafts, etc., of the American cars which showed up the best in the race were made of high-grade American steel and that absolutely no difficulty whatever was experienced with the parts that were made of these high-grade American steels, whether the steels were used in the frames, crankshafts, distance-rods, axles, gears or any other part subject to any hard or severe use. In conclusion, it seems to us a most unfortunate thing that the failure to win the race should be ascribed by such a "prominent manufacturer" to steel, when everyone knows that tire troubles were the real reasons.—George H. Sargent, Metallurgist, Carpenter Steel Co.

The prominent maker referred to did not have a car entered in the Vanderbilt cup; the same maker turns out, also, what is admitted to be one of the four best American-made cars.

RUST FOR WATERJACKETS

St. Louis, Mo.—Editor Motor Age—Some time ago I noticed an article in Motor Age on a solution to use to rust up a leaky waterjacket. I have a leaky waterjacket on my model 14 Rambler. The leak is apparently in the exhaust, and while it does not affect the cylinders it does affect

my Gabriel horn materially. If possible I would like to know some method to rust up this leak without injuring the cylinders. Will you kindly state through the columns of the Readers' Clearing House the correct solution to be used?—C. T. S.

It is not uncommon practice to use sal-ammoniac to form a rust for the purpose of closing very small leaks in waterjackets. A handful of sal-ammoniac put in the water and permitted to stand 3 or 4 days will probably remedy the trouble. It will be better to have the solution touch only the affected parts, as far as practical, although there is no particular objection to touching other parts. The solution may be placed in the radiator and after it has been forced to the waterjackets by the pump, the radiator can be drained and flushed with clean water. It may be necessary to repeat the operation if the first trial does not do the work in a satisfactory manner.

WHO IS IT?

Cedar Rapids, Ia.—Editor Motor Age—After having owned two motor cars I am now looking for what I consider an ideal one. Will you be kind enough to inform me whether there is now made, in America, a car which possesses the following points: Motor, not under 30 horsepower; cooling system, thermo-syphon; ignition, make-and-break; clutch, multiple disk; final drive, shaft or chains; speed change, sliding gear; lubricating system, splash; wheels, not under 32 inches, with 4-inch detachable tires; tread, standard; guards, front connected solidly to the frame; body, aluminum; weight, not over 2,500 pounds.—Subscriber.

The letter is published so it may be answered by any maker who can fulfill Subscriber's order. Will the writer please furnish Motor Age with his name and address, so that correspondence received may be forwarded to him?

PIERCE SCHOOL

White Bear Lake, Minn.—Editor Motor Age—Kindly inform me through the columns of the Readers' Clearing House if the George N. Pierce Co., of Buffalo, runs a school at its factory giving instruction to those who wish to become drivers. If it does, can you give the name and address of the company. Is there a reliable school in Chicago?—C. L. D.

The Pierce company does conduct such a school. To enter it one must have the recommendation of a Pierce agent. The pupil is set to work tearing down and setting up a car to become familiar with the parts. He is instructed in driving also. The school will open for the season shortly, and is free to those accepted as pupils. The company may be addressed at Buffalo. The Chicago School of Motoring, 264 Michigan avenue, Chicago, is reliable.



PACIFIC MOTOR CAR CO'S STORE AT SEATTLE, WASH.

Laciar an Aeronaut—R. J. Laciar, formerly with the Darracq Motor Car Co., has joined the Aerocar Co.'s selling staff.

To Handle the Packard—The Standard Automobile Co., of Cleveland, O., is to be the Packard representative there during the coming season.

Peerless in Chicago—The Northern Motor Car Co., 1449 Michigan avenue, has taken on the Peerless and will represent the car in the northern part of Illinois and Indiana and the eastern part of Iowa. Clinton Hunter is manager of the company. The company will continue to represent the Northern.

Newcastle Gets the Maxwell—The big plant to be erected by the Maxwell-Briscoe company will be located at Newcastle, Ind., it is said. The capacity will be more than that of the two plants now owned by the company at Pawtucket, R. I., and Tarrytown, N. Y. A special feature will be a half-mile track which will be used for testing cars as completed.

Will Make Air-Cooler—The Victor Automobile Co. is being organized at Ridgeville, Ind., a small town in northeastern Indiana, near the Ohio line. Indianapolis capitalists are interested in the concern and the company will be incorporated within a few days. Plans are to manufacture two models for the 1907 season, one a runabout and the other a touring car. Each model will be built with the same type of motor, probably a 20-horsepower air-cooled engine.

Will Make Trucks—The factory of the Sheridan Mfg. Co., of Lansing, Mich., which intends to turn out commercial trucks for farm and other use, will be in operation within a short time. In laying out the plant it was found that extra machinery would be needed and F. A. Young and David Duers, the promoters, appealed to the business men of the place with the result that the latter subscribed for stock in large quantities. At a meeting of the stockholders of the company the following officers were chosen to have charge of the operations: President, G. S. Mitchell; vice-president, David Quers; secretary, F. A. Young; treasurer, G. W. Tro-

man; attorney, A. J. Tuttle. The company has purchased three sizes of engine patterns to be used in its machines.

Menges Making Cars—A. L. Menges, formerly designer for the Harrison Automobile Co., of Grand Rapids, Mich., and inventor of the self-starting device used on Harrison cars, has left the employ of the company and has embarked on the manufacture of cars at Grand Rapids.

Dr. Hawkins Out—Dr. John A. Hawkins has sold his interest in the Hiland Automobile Co., of Pittsburg. Dr. Hawkins organized the Hiland company and was its president from its organization in 1904 until now. It is more than likely he will shortly be found in the business again.

Dorsett Company Incorporates—The L. P. Dorsett Co. has been incorporated to conduct a general garage business in Washington, D. C. The capital stock is \$25,000 and the incorporators are Leonard P. Dorsett, L. S. Dorsett and Arthur D. Carpenter. Leonard P. Dorsett has given a bill of sale to the new company of chattels in the garage at Seventeenth and U streets, N. W., the considering for the transfer being \$2,480.

Look for the Dragon—Work on the first batch of the new Dragon cars is being pushed rapidly to completion at Detroit, and it is now believed that the cars will be out in about 2 weeks. The superintendent of the factory is T. F. Randolph, heretofore chief engineer of the Jeanesville Iron Works, at Hazeltown, Pa. Mr. Randolph is a gas engine expert of 5 years' experience, and a graduate of the Harvard scientific school. He will construct the Dragon on the designs made by the French engineer, Leo Melanowski.

Two Premier Models—There will be but two Premier models in 1907, according to a statement that comes from the Premier Motor Mfg. Co., of Indianapolis. This season the company had several models, practically all of which will be discarded. Next season the company will place on the market a touring car and a runabout. Each will be fitted with a 24-28-horsepower engine, either water or air-cooled, as the purchaser desires. Ground is being broken

for the erection of some new factory buildings, which, when completed, will allow the company to enter the commercial vehicle business on an extensive scale. A 2-ton platform body truck is rapidly nearing completion and will be ready for the market early in 1907.

Will Make Trucks—The American Motor Truck Co. has leased a portion of the mammoth Holley plant at Lockport, N. Y., and will engage in the manufacture of motor trucks. The company will employ several hundred men. The concern is an adjunct of the plant of the American District Steam Co.

Lozier's New Agents—The Eastern Auto Co., of Philadelphia, has taken the agency for the Lozier cars in Philadelphia and vicinity. The San Francisco agency for the Lozier has been placed with the Lozier Auto Agency, a new concern, managed, however, by a well known man in the San Francisco trade—Ben I. Bill. Frank P. Libbey, of Salt Lake City, is another new Lozier agent.

Logan Will Use Carrico Engine—An order for from 100 to 200 air-cooled Carrico engines has been placed with the Speed Changing Pulley Co., of Indianapolis, by the Logan Construction Co., of Chillicothe, O. The latter company is preparing to place on the market in 1907 a runabout, which will be fitted with the Carrico 20-horsepower air-cooled engine and the Hassler transmission, made by the Marion Motor Car Co.

Mosher Looking for Site—Charles P. Mosher, inventor of a motor car gear, is trying to interest the business men of Ithaca, N. Y., in his patent with a view of building a factory in that city. He wants to sell \$10,000 worth of bonds among the business men of whichever town secures the prize. It is understood he has negotiations pending with the Binghamton chamber of commerce, as well as with the Business Men's Association of Ithaca.

Brown-Lipe's New Factory—The Brown-Lipe Gear Co. will take possession of its new factory building at Syracuse, January 1. The building consists of five stories and basement. Workingmen are now putting on the roof. The new plant will afford 65,000 square feet of floor space. A power house is being erected at a cost of \$50,000 which will be equipped with a Ball 400-horsepower, four-valve Corliss engine, a 250-horsepower straight line engine and three 250-horsepower Sterling boilers.

Fostoria's Latest—Harry J. Adams, of Fostoria, O., who is selling agent for the Reo line in a number of counties in northwestern Ohio, last week purchased a plot of ground, 70 by 140, on Tiffin street, on which a two-story building for an automobile garage will soon be erected. The building will have a frontage of 50 feet and a depth of 140 feet. The ground floor will be of cement, and there will be no posts within the whole area, eye-beam trusses being used. Mr. Adams is contem-

plating the opening of a new Reo garage in Toledo also next season.

Prudden Enlarging—Another large addition to the factory of the W. K. Prudden Co., manufacturer of motor car wheels, at Lansing, Mich., is being constructed, it is announced.

Autocar Co. Building Branch—The Autocar Co., of Ardmore, Pa., has let the contract for the erection of a new building on North Broad street, Philadelphia, for the housing of its branch in the quaker city. The building is to be completed before January 1.

Lowe Will Handle Aerocar—Arrangements have just been completed whereby the newly-organized George H. Lowe Co., of Boston, will represent the Aerocar in the New England states for the coming season. Maine, New Hampshire, Vermont, Rhode Island and Massachusetts will be covered from this center. The location of the new show-rooms has not been decided as yet. Mr. Lowe is one of the earliest veterans of the trade. He began in the sewing machine business, then the bicycle and now the automobile.

Novel Garage—A garage that attracts considerable attention with visitors to Seattle, Wash., is that of the Pacific Motor Co., 2201-03 Second avenue. The building in a way illustrates the regrade work that has been carried on in the city. When the work of leveling this section of Seattle was undertaken a year ago, the owner of this particular property decided to allow three frame structures to remain. These buildings were propped up, while the work underneath was carried on. When completed the effect proved rather novel, as the frame buildings rest on the roof of the garage. The garage was specially reinforced so as to carry this extra weight. The salesrooms are on a level with Second avenue. A. G. Perkins is the

proprietor of the Pacific Motor Co., and he is the agent in Seattle for the Haynes car and the Reliance truck.

New Tire Concern—Tires and similar goods will be manufactured by the Niagara Rubber Co., recently organized at Lockport, N. Y. The concern will begin operations in about 2 months with 300 men.

Change of Officers—At a meeting of the board of directors of the Automobile Trade Credit Association, W. B. Leshner, of the Weed Chain Tire Grip Co., was elected a director and president to fill the unexpired term left vacant by the resignation of F. J. Alvin, who resigned because of severance of connection with the American Electrical Novelty & Mfg. Co. L. C. Burnet has resigned as treasurer and has been succeeded by Michael J. Martin, of the George A. Haws Oil Co.

Tracy Retained—The Locomobile company has retained the services of Joseph Tracy as consulting engineer. Tracy has been a consulting engineer, with offices in New York, for the past few years, which are continued, inasmuch as he does not agree to devote his entire time to the Locomobile company, which, however, may call on him for advice at such times as may be desired, the rest of his time being devoted to his work as consulting engineer in Greater New York.

McDuffee's New Lines—The McDuffee Automobile Co., 1501-5 Michigan avenue, Chicago, long the local representative of the Stoddard-Dayton, has added to its line by taking on the De Luxe, placing an order for forty cars and being assigned the northern middle west for territory. In addition to this Mr. McDuffee has contracted to handle the entire output of the Kissel Motor Co., of Hartford, Wis., which makes the Kisselkar, a four-cylinder 30-horsepower machine. He announces he will take 100 Kisselkars for 1907 and more

the succeeding years. The McDuffee company will continue to handle the Stoddard-Dayton in addition to the De Luxe and Kisselkar.

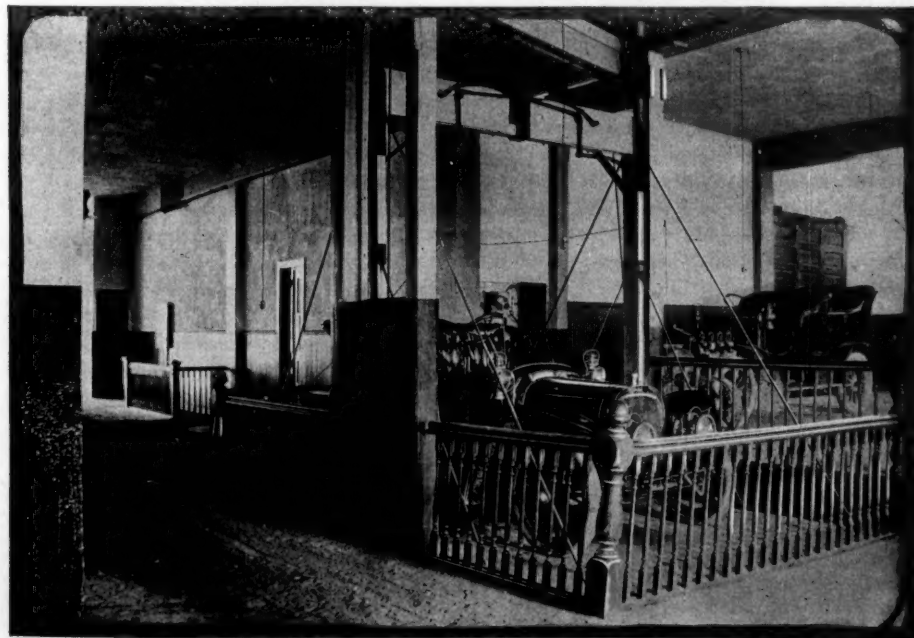
Franklins to Coast by Express—The H. H. Franklin Co., of Syracuse, shipped on Friday a carload of motor cars by express from Syracuse to the Boyer Motor Car Co., at San Francisco. One carload will be shipped by express each week until the demand can be kept up with by freight delivery.

Auto-Mixte Prospering—The Auto-Mixte, or gasoline electric car, which is exploited by a company in Brussels bearing the same name, has met with such success that its makers have determined to float a French concern with headquarters in Paris. The Mercedes company also is designing a gasoline-electric combination, which forms the subject matter of several of its recent patents. The Mercedes company will file a patent in the near future for a carburetor in which the mixing chamber is entirely done away with.

Columbus in Line—C. Edward Born, Thomas Curtin and Carl J. Hoster, capitalists, have formed a company to erect a motor car factory in Columbus, O. Cars weighing 1,650 pounds and of 24-horsepower capacity will be offered to the trade. The engine to be used is the invention of F. S. Harmer, of Columbus, and is of the air-cooled type. It is understood that members of the Curtin-Williams Automobile Co. are also interested in the new company. Articles of incorporation will be filed with the secretary of state this week and the plant will be erected some time this fall.

Diamond Tire Policy for 1907—"It is up to the user and the trade as to whether or not price or quality shall rule in the tire end of the industry," is the gist of the announcement of the Diamond Rubber Co. "The public will have the season to decide. This company, however, has decided to resist and put aside all temptations offered by orders to be had only on a competitive price basis and 'stand pat' on quality will be the slogan. In the matter of quality the company emphatically states that it has succeeded in developing a tire which it considers is much better than in its 1905 or 1906 production."

New York Changes—Joseph M. Gilbert, who for some years has been connected in an official capacity with the Firestone Tire & Rubber Co., has been selected to succeed Emil Grossman as general and sales manager of the Continental Caoutchouc Co., the American agency for Continental tires. Another change announced is the resignation of J. Stewart Smith, who for 3 years has been in charge of the metropolitan district for the Continental. Mr. Smith has become eastern sales manager for the Electric Rubber Co., of Rutherford, N. J., maker of the Panther tires, and will shortly open, in New York, headquarters and salesrooms.



INTERIOR OF PACIFIC MOTOR CO.'S STORE AT SEATTLE, WASH.

THE REALM OF THE COMMERCIAL CAR

The Impossible

LOAD a 3-ton truck with 5 tons and so loaded use is to draw in a loaded 3-ton electric truck. When the gasoline truck is doing the work the driver of the electric suddenly throws in the emergency brakes and all the strain comes on the gasoline machine. Do this two or three times, each time after closing time at night in a season when streets are soft and muddy. To this gentle treatment add the pushing of horse-drawn coal wagons up steep inclines or out of deep holes and you have the first "impossible" that commercial machines have encountered in not a few of our big cities within the last 10 months or one year.

On a 3-ton truck pile a 4-ton load of merchandise and require the truck to travel 9 $\frac{1}{4}$ miles with this load in 50 minutes, the streets traversed being asphalt, macadam and cedar blocks, with short stretches of rough cobble stones. On top of this the first ten blocks are through the busiest part of the city—crowded streets being met on every run—and the last four in a similarly busy section. Require the truck to make four of these trips a day, 64 miles, and then do not let it start on its first trip until long after 8 a. m. and necessitate the finish being made before 7 in the evening.

On a residential street when approaching a flagstone crossing at a corner, where the stones, by actual measurement, extend 5 inches above the level street surface and where there are two or three depressions close to the crossing, do not shut off power, but continue merrily on with a 3-ton load at a 10-mile-an-hour pace until the springs strike, the load shuffles and lurches and the steering wheel is almost wrenched from the driver's hands and then close up the throttle and apply the brake. In approaching a street car track crossing don't shut off power, don't try cutting the tracks on an angle, go squarely up to the tracks, both front wheels striking the high rail simultaneously and then after the driver is nearly thrown over the dash and the load crushed up against the back of the front seat, shut off the power and apply the brakes to see why the motor has stopped running—a broken exhaust valve stem being the trouble.

Put on your commercial wagon an operator who has for 15 years driven one of your best horse wagons in which time he has become the trusted driver of the firm, but who has never seen the inside of a machine shop, who does not know which

way to turn a nut when loosening it and whose sole knowledge of motoring is a ½-day lesson received from a demonstrator the morning the truck was placed in commission. Require this driver to work 3 hours a day longer than drivers of horse vehicles and after that to garage the machine and take care of it—he knows it has a motor, four wheels and a hand steering wheel.

Have your manufacturers engaged in making pleasure motor cars, gear one slightly lower and placing a commercial box and solid rubber tires on it, call it the

output must be called back to the factory to have certain parts rebuilt.

Do all this and then wonder why it is commercial machines are being so severely criticized, try to wonder why so many users have such heavy repair bills, why not a few have trucks stored away some place in their barns that they refuse to take on the streets and which they cannot sell and after you have done all of this put forth a final effort to discover who is to blame, where the remedy lies and how long it will take to put all matters right again.

Each "impossibility" cited is based on actual circumstances. Pulling double loads, pushing out horse-drawn vehicles, rushing over flagstone crossing and street



GASOLINE ENGINE CARRIED WITHIN THE THRESHING MACHINE

best commercial machine in the country. Let the springs be extraordinarily weak, the engine not built ruggedly enough to withstand rough street and heavy load hardships and the back axles just strong enough to break with an extra load. Permit the engineers to put in cheaper materials in the axles and driveshafts, the assumption being that heavier weight will more than counter-balance for good materials. Sell the machine in a town where the agent does not carry a complete stock of duplicate parts and where he has not a competent repair man to make repairs and finally when repairs are made charge extortionate prices for them to the wagon that was guaranteed to run without repairs for at least two seasons. Have many new makers build sample trucks and before they have been tested out for a few months begin placing them on the market and after 10 months, discover they have been rank failures in more than one respect, so much so in fact that the entire

car tracks, using untutored horse drivers, manufacturers using inferior materials and agents giving slow repairs coupled with exorbitant charges are all crimes that have acted against the more general progress of the motor wagons.

To guarantee a car for 3 years, to place a lifetime of that length on solid rubber tires for heavy truck use, to gear a 5-ton truck to 15 miles an hour, to use a driver not schooled in the mechanics of the gasoline engine and transmitting scheme, and to operate a wagon without its being overhauled once a week is wasteful and ridiculous excess.

MOTOR THRESHER

A self-propelling thresher, invented, built, developed and tested in the wheat fields of Kansas and hence called the motor thresher is the latest addition to farm machinery of the motor class. The thresher, the invention of F. A. Ferguson, of Belleville, Kan., has been used for two



seasons and has been given the hardest kind of service with a view to discovering any flaws it may have. Not until after this thorough try-out was it decided to offer the thresher to the public and the organization of a company with \$500,000 capital and Mr. Ferguson as president was the result. The present headquarters of the company is in Belleville, but it has been practically decided to move the offices and establish a large factory in Kansas City, Kan.

From the illustrations herewith presented it may be seen how the thresher looks in action, both in the field and on the road. The grade shown in one illustration is claimed to be 32 degrees and the car is making steady progress. The driver and his rather uncomfortable perch may be seen in this picture. He sits at the right of the machine when it is moving. Threshing, however, is only one of the uses to which the invention may be put. The separator is detachable, so that

dustproof metal case, so as to preclude the possibility of fire, one of the great dangers in work of this sort. This case is also intended to catch oil drippings and the like. The engine carries two ignition sets. One entirely new feature is the transmission, which permits of two speeds forward and reverse on one lever. This same lever also carries the clutch mechanism, so that control, outside of throttle and spark regulation, is controlled by one hand of the operator. The clutch presents a surface of metal to metal and fiber. Ball-bearings are fitted wherever practicable. The reversing mechanism is self-contained in the male member of the clutch and details of this are not available at present.

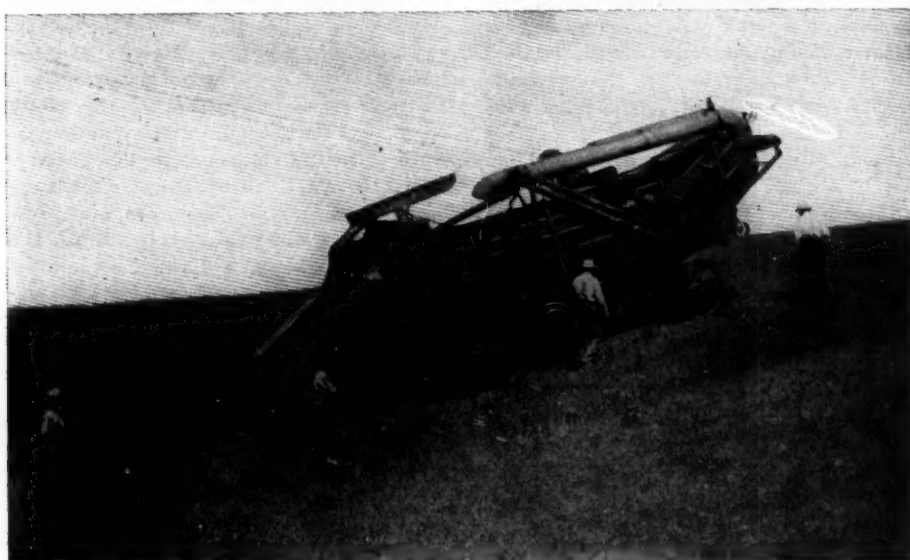
As compared with the ordinary threshing outfit, the motor thresher presents a considerable saving in weight. The machine complete tips the beam at 20,000 pounds, which is 10,000 pounds lighter than the ordinary traction engine, not



a day. In the operation of threshing, power is applied on two sides, which makes the operation more steady, reducing the side strains. With this arrangement, belts can be run much looser and need not be subject to the same rigid inspection that must obtain when the drive is all from one small pulley. A total of 586 bushels of wheat in 3½ hours is the threshing record of the machine. Advices from the Belleville office are to the effect that there are on file there more orders than can be filled in a year, even with considerable manufacturing facilities.

THE OUTLOOK

One maker the Premier Motor Mfg. Co. has dropped the commercial end of manufacturing for the approaching season having decided to devote all its energies to the making of air and water-cooled pleasure cars. The Michell concern will continue its present worm-drive, 20-horsepower 1-ton truck fitting any of several body styles according to the whims of the buyers. From the American Motor Truck Co. comes the intelligence that its 1907 model will not be ready before December 1. The Four-Wheel Drive Wagon Co. says that its smaller type of four-wheel drive truck will not be ready before the first of the year and that its 5-ton machine will be continued much as at present. The American Mch. Mfg. Co. is making deliveries of its Commerce trucks. The Franklin company hopes to have its light, air-cooled truck perfected soon upon which time deliveries will be pushed. The Knox Automobile Co. continues its several styles improving each from time to time as the occasion presents itself, the latest changes being in the cause of accessibility in regard to the motor, the use of a governor thereon and carrying the brakes on the jackshaft. The Deere-Clark Co. is bringing out a 2-ton, 25-horsepower truck. Of the many other makers now actively engaged in the business it is expected all of them will have something of interest to offer. The number of makers of gasoline wagons continues to increase and while the list of makers of electric grows more slowly, those makers are equaling and in not a few cases exceeding their past outputs. A few makers who made a half-hearted entry into the motor wagon world have chilled, imagining the building and selling of motor wagons was identical with that of pleasure machines.



THE MOTOR THRESHER CLIMBS STEEP GRADE

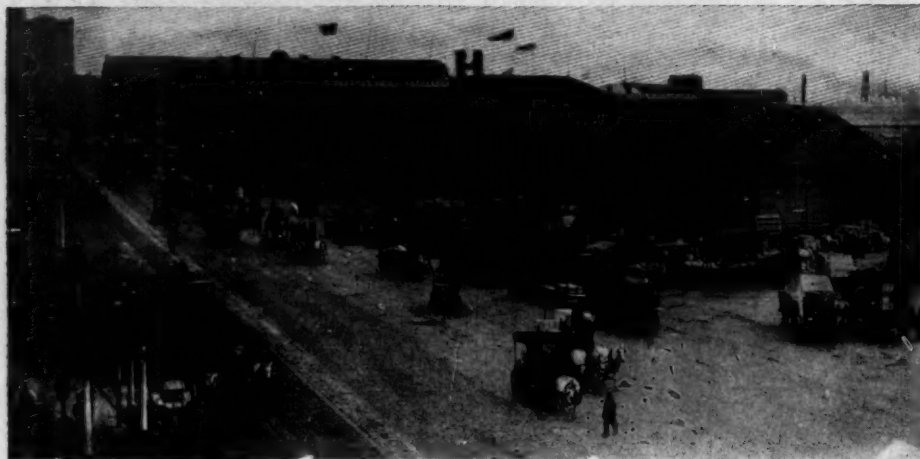
any sort of body may be fitted to the chassis. In such form it can be used for heavy hauling, drawing, in addition, several trailers. Or the chassis alone may be employed to drag gang plows or other machinery in the field. So far, however, its principal work has been threshing.

Many details of construction are not available on account of the reticence of the company's officials prior to the establishment of its factory. These facts, however, are furnished: The motive power for both drive and threshing is supplied by a four-cylinder, water-cooled vertical engine of conventional type developing 30 horsepower. The entire engine, as well as the transmission, is enclosed in one

counting the weight of the conventional thresher on road wheels. Besides, the entire machine is self-contained, carrying its own water and fuel supplies. It can be made ready for the road or set up for threshing in 2 minutes, it is claimed. The fact that one man only is needed for operation does away with the expense of the usual crew. Besides, the skill required to operate is less than in the case of a steam engine. Saving accomplished in these ways is estimated at from \$8 to \$10



MOTOR WAGON TEST IN NEW YORK



WEST STREET, NEW YORK, LOOKING SOUTH

AFTER slumbering for 2 years and 6 months the Automobile Club of America has awakened to the necessity of conducting tests of commercial vehicles and has scheduled a test to take place on the streets of New York from November 7 to 10 inclusive. The test is over average city streets, all vehicles covering the same course each day. The first day machines are loaded and run over a 40-mile course without making stops; on the second day, with the same load and over the same course, arbitrary stops are made; on the third day the machines go over the same course without load, not making any stops; and on the fourth, and last, day they go over the same route empty but making arbitrary stops.

The rules call for vehicles used solely for commercial use and made in America or abroad, propelled by any motive power. Accompanying the entry fee, of \$25 for each machine, must be a full description with photographs of the vehicle, giving such information as: Weight including fuel and supplies, water and fuel capacity,

name of maker, place of manufacture, size of tires and make, motive power, rated horsepower and number of cylinders, dimensions of cylinders, gear reduction; and, in case of electric machines, weight of battery, number of cells, voltage per cell and ampere-hour capacity. All vehicles operate during the test in the same class and each vehicle must during 2 days of the test carry a load of at least 50 per cent of its own weight with all supplies on board in addition to the driver and observer. Each contestant shall furnish his own dead load, of whatever material he sees fit to carry, which load will be weighed and checked by the contest committee. Each vehicle will carry an official observer whose duty it will be to note the vehicle performance, fuel and water consumption. Repairs will not be permitted without his knowledge and record of them. Vehicles will carry an official sign showing make and load, as well as official number of car. The cost of operation during the test, consisting of kerosene, fuel oil, electric current, coal or coke, shall be borne by the contestant and its amount will be

measured and charged up against the vehicle. Cost of adjustments and repairs, figuring labor at 50 cents an hour and repair parts at retail prices, will also be charged against the vehicle, and the cost of operation per ton mile of paying load ascertained. Where coal or coke are used, it must be carried in bags or in such form as to be easily checked by the committee's men. At night all contesting vehicles will be stored at the depot of the Automobile Club of America. Contestants may carry other passengers than driver and observer, but their weight will not be included as a part of the dead load. Contesting cars will be weighed in on November 5 between 9 a. m. and 5 p. m. at the Automobile Club of America club house, weighing in with tools, fuel and supplies aboard. Cars will also weigh in with dead load on each morning of the test and be checked in at the end of the day's run.

The route is in many respects a taxing one. The general plan has been to run it in two sections, one from the clubhouse at Fifty-eighth street and Fifth avenue, northward, touching a point beyond the Harlem river at Two Hundred and Thirtieth street and making in all exactly 20 miles. The second section is a 10-mile route from the clubhouse to the Battery, directly down Fifth avenue to Broadway, thence west to West street; swinging back to Broadway at Canal street. In all, the commercial wagons will cover 40 miles a day. Each morning they will start from the clubhouse and swinging from Fifth avenue run across Fifty-ninth street and up on the west side of the park for the northern circuit. In the afternoon, the wagons will run southward, making two round trips of 20 miles in all, a total of 40 miles during the day.

The northern route, starting from Fifth avenue, continuing across Fifty-ninth street to Central Park west and up this side to One Hundred and Tenth street, is asphalt and comparatively easy going, al-



BROADWAY AND TENTH



NEW YORK STREETS

COLUMBUS CIRCLE

though Central Park west is torn up in places and the vehicles will have to avoid the excavations. Turning west on One Hundred and Tenth street, the road is over Belgian blocks to Amsterdam avenue, and will run north on Amsterdam avenue to One Hundred and Sixty-first street, over a good macadam road. At One Hundred and Sixty-first street the vehicles turn left and follow the Kingsbridge road, which leads into Broadway at One Hundred and Seventy-eighth street. This is also asphalted a portion of the way and beyond that are Belgian blocks until a point close to Dyckman street is reached. From this point northward there is a good macadam surface until the ship canal bridge is reached, and from there on there is again Belgian paving over a short distance. The northern end of the road is at Two Hundred and Thirtieth street; here a sharp right angle turn is made for a short distance and another right angle turn back into Bailey avenue follows. This short stretch at Two Hundred and Thirtieth street is a steep grade and the street has been torn up for more than a year. This is the crux of the whole trip, and it is here that the trucks with their loads will have the hardest time of the whole northern circuit. The turns, however, are not severe, and where care is used the heaviest truck can get around here without trouble.

The run south on Bailey avenue and Sedgwick avenue to Fordham road is over a good macadam thoroughfare, and after a sharp turn into Fordham road and something of a grade at this point, the road is in fair condition to Jerome avenue. From Fordham road south to Jerome avenue to Central bridge is an exceedingly well known road. It is clear asphalt all the way with nothing to worry the cars except trolley poles in the middle of the road, which there is no reason that they should encounter. Crossing the Central bridge and around the little triangle which leads them to Seventh avenue at One Hun-



FIFTH AVENUE AND FORTY-SECOND STREET INTERSECTION

dred and Fifty-fourth street there is a stretch of Belgian blocks which are not very well laid and which are apt to jolt the cars to some extent. South on Seventh avenue there is a soft stretch of macadam which, while used extensively by machines, is not by any means an easy road to travel nor a desirable one. The run, however, is cut short at One Hundred and Thirty-fifth street, where a turn eastward over Belgian blocks and asphalt brings the cars into Fifth avenue, which here, as further down town, is well asphalted. Continuing straight down the avenue, with a slight detour around Mt. Morris park at One Hundred and Twenty-third street, the boundary of Central park is followed to Eighty-sixth street, and from there, there is another detour to Park avenue, to Seventy-ninth street and back to Fifth avenue. This extra jog in the road was inserted to get the mileage and does not add greatly to the taxing of the wagons. All the streets are asphalted except one block, which is well paved with granite paving. From Seventy-ninth street it is a straight run down asphalted Fifth ave-

nue right up to the clubhouse doors.

The southern route to be traveled by the cars in the afternoons of the days of the test is straight down Fifth avenue upon asphalt to Twenty-third street, and at that point a swing is made into Broadway, which is followed straight to the Battery. This road is too well known to need description. It is asphalted as far as Canal street and below that are stretches of Belgian block paving, with a few intervening blocks of asphalt. The turn at Battery place just below Bowling Green is over Belgian blocks, and West street, which is then followed as far north as Laight street, is paved chiefly with granite. But the cars can get asphalt by running to the west side of the street along the front of the docks where there are wide and long stretches of asphalt paving set by the Dock department. The turn to the right at Laight street leads on to a granite paving, as is the case across Canal to Broadway; from there north the road lies over the same road but is easier to negotiate. The routes selected are practically the last test.

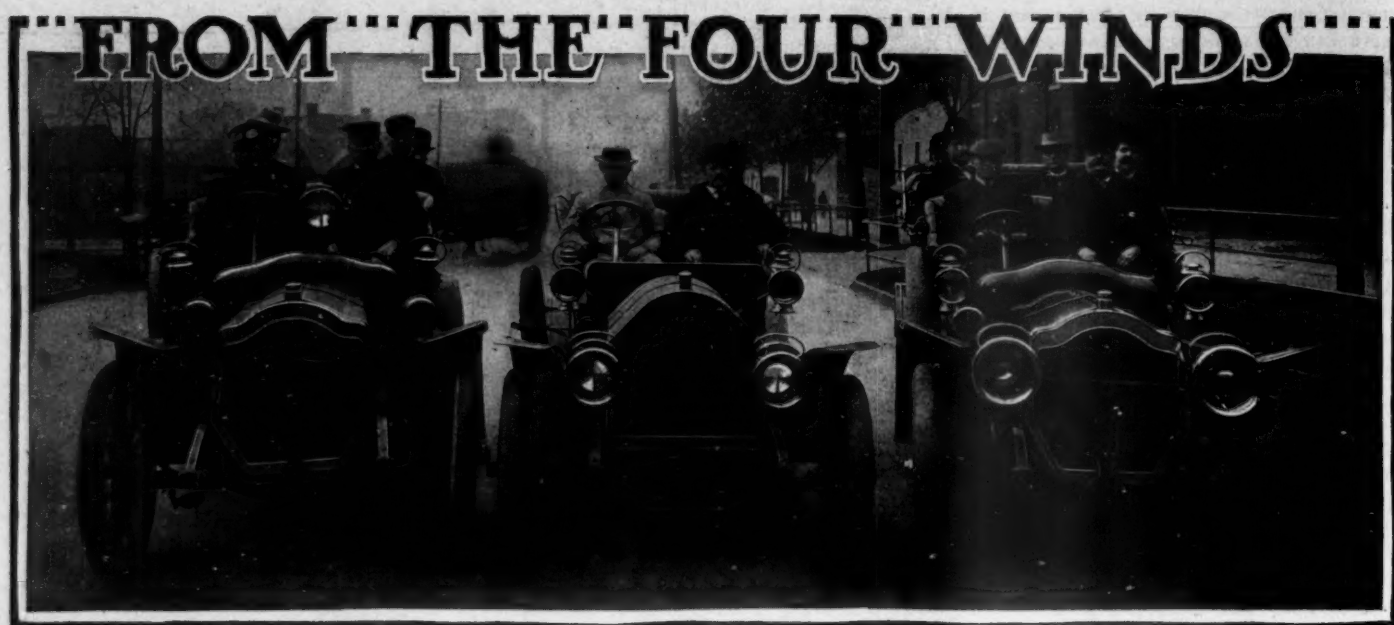


BROADWAY AND FOURTH



TRAFFIC IN CANAL STREET

NEW YORK STREETS



BUFFALO FIRE CHIEFS MAKE ANNUAL INSPECTION OF DEPARTMENT IN THOMAS MOTOR CARS

Exhibition for Belgium—The Belgian salon will open in Brussels on January 12, 1907, closing on the 28th. Important modifications are announced to make the show better than previous ones.

E. Russell Thomas Buys Racer—Edward Russell Thomas, of the racing board, has bought the twin 120-horsepower car to the Hotchkiss driven by Elliott F. Shepard in the Vanderbilt race. This was the car piloted by Le Blon in the grand prix. Though Mr. Thomas says no more than that he will have it fitted as a runabout it is good guessing that he has in mind being once more a competitor at Ormond.

Chicago Club Banquet—The annual dinner of the Chicago Automobile Club will be given November 8 in the banquet hall of the Auditorium and the affair will be in the nature of a celebration of the starting of work on the new clubhouse, and a reception to the retiring and incoming officers. J. De Mont Thompson, chairman of the A. A. A. racing board, and several of the other officers of the national organization are expected to be present.

Canada's Big Show—Montreal is making active preparations for what is intended to be the largest motor car, motor boat and sporting goods exhibition outside of New York and Chicago. The dates will be April 6-13. The arena was supposed to be large enough, but so many spaces have already been engaged that the exhibition managers are considering plans for a large addition to the building. Motoring is making rapid strides in Canada and hundreds of cars are on the roads now where but a few were to be seen a year ago. The business has grown to such an extent that larger and more commodious quarters are necessary with some of the dealers. The Dominion Motor Car Co. is fitting up the large six-story block on Beaver hall hill, overlooking Victoria square. The Montreal branch of the Dunlop Tire Co. has expanded its business to such an extent

that its three-story building, on Victoria square, is entirely inadequate and it is considering plans for a new building.

Swiss to Hold Show—The third Swiss show will open between May 15 and 26, 1907, at the Tonhall in Zurich. There has already been subscribed \$4,000 towards the expenses of the show, which will include a foreign section.

Politicians Use Motor Car—During his tour of Indiana last week, William Jennings Bryan made part of his trip by motor car. There are no railroads between Fortville and Greenfield so it was arranged to take Mr. Bryan from one point to the other, 13 miles, in a motor car. As a precaution three machines met him, one car running as a pacemaker to keep the roads clear and the third following Mr. Bryan's car, to be available in case of accident on the road.

Buffalo Chiefs Converted—The ever-increasing popularity of the motor car is likely to spread to the Buffalo fire department. Sentiment is growing in favor of furnishing the fire chief and the assistant fire chief with motor cars in place of their horses and wagons and thus afford them improved means of getting to fires. The fire commissioners are also favorably impressed with the idea. That the motor car is very popular among the firemen was shown at the recent annual inspection of the Buffalo fire department. For the past half century or more the heads of the department drove their horses in making their tour of inspection to the various engine, truck and chemical houses and in that way lost much valuable time. But this year there was a change. The horses driven by the fire chief and the other heads of the department were kept in the stables during the recent inspection and instead these officials made the tour to the various fire houses in motor cars furnished for the occasion by the E. R. Thomas Motor Co., of Buffalo. As shown

in the accompanying picture, the outside cars are 1907 models, while the machine in the center is the new Thomas forty.

Unique Michigan Idea—At the annual service at the First Methodist church of Lansing, Mich., a service for old people and cripples, motor cars were employed to bring invalids and extremely old people to the church. The members of the Epworth League secured a number of machines and the afflicted and those too weak to attend otherwise were given an opportunity to attend service.

Paris Incident—Motor cars were the means of creating and also of stopping a riot and fire in Paris on Sunday, Oct. 14. At the Longchamps races the crowd, exasperated at the bad start of one of the last races, got beyond control and rushed to fire the betting booths. Excellent material for this was found in the shape of spare tins of gasoline just outside the racecourse. The wooden buildings were soon in a blazing state. Directly afterwards arrived the motor fire engine of the city of Paris, the first fire engine on the spot and one of the most powerful to be had. The ruins of the booths were quickly out and the danger to the pavilions was averted.

Kansas City Buys Cars—The advantages of municipal motor cars have been demonstrated so clearly to the city officials of Kansas City, Mo., that two runabouts have been purchased for inspection purposes, one each by the water and park departments. The cars were purchased after a test of 30 days, during which they demonstrated that twice the ground could be covered than was possible with horses. The water inspectors cover 30 to 40 miles a day and the horse infirmary was full as the results of their work. Horses lasted little more than a year under such treatment. Much more work is now done by the man with the car, and it is likely that the whole department will be similarly equipped if results are equally satisfactory.

in the future. The police department has authorized the purchase of two motor ambulances.

Milwaukee's Choice—The Milwaukee Automobile Club has elected a new board of directors, as follows: For 3 years, C. S. Drake, Dr. Ralph Elmergreen, C. F. Nie-decken; for 2 years, Rev. J. F. Szukalski; for 1 year, Chris Schlotka. The directors will elect the officers of the club.

Palm Beach Dates—The Palm Beach Power Boat Association decided this week to give its third annual speed carnival and parade on Lake Worth, Palm Beach, Fla., January 29-February 1. The event will last from Tuesday to Friday inclusive. As in former years, the different class of motor boats will be catered to.

Borrowers Arrested—Students of the manual training high school of Indianapolis who have been running away with other people's motor cars have found themselves in an unpleasant predicament. Two of them were caught just as they prepared to get in Roy E. Adams' car and were arrested immediately on a charge of compounding a felony. Several days ago four boys, whose ages ranged from 9 to 13 years, took a car from in front of a down town church and drove it about the city for several hours.

Lytle's Plans Upset—The wide advertisement of Lytle's contemplated attempt on the Philadelphia-New York record necessitated its abandonment, and the Jersey Hawkshaws had their vigil for nothing. Lytle put in the week in the quaker city demonstrating the 1907 type XV Pope-Toledo, and on Sunday, accompanied by President Percy L. Neel, of the Quaker City Automobile Co.; L. G. Welbon, of the Pope-Toledo factory, and Robert L. Dunn, of the publicity department of the company, made a leisurely trip to the metrop-

olis. Thence he will drive to Boston via Hartford, and may later make the attempt to create new figures for the New York-Chicago run.

Aeroplane a Bird—The aeroplane of M. Vuia is again on the war path. It is, as is well known, mounted on a quadricycle and takes the form of a great bird. It is propelled by a carbonic acid gas motor. Officially tested in October, it succeeded in clearing the ground, man, motor, quad and wings, for the space of $\frac{3}{4}$ second.

Queen Marguerite Tours—The dowager Queen Marguerite of Italy recently paid a visit to Paris in a motor car. She came all the distance from Turin in a 40-horsepower Fiat, and in addition did considerable touring in the French chateau country. On the radiator of the car, in front of the motor, was perched and firmly secured an image of St. Christopher, her patron saint. The dowager queen was unwilling to proceed anywhere without the emblem fixed to her car, saying that if it did not bring luck it at all events avoided accidents. The queen has had no serious accident during the whole of her 2 months' motor car tour.

New Pennsylvania Club—Pennsylvania's list of motoring clubs is rapidly growing. The latest addition is the Bethlehem's Automobile Association, organized last Friday at Bethlehem. The election of officers resulted as follows: J. Walter Lovatt, president; W. E. Martin, vice-president; Charles T. Hess, secretary, and Eldridge Wilbur, treasurer. At the next meeting of the new association a resolution will be offered looking to an alliance with the Pennsylvania Motor Federation. There is some talk of the formation of another club in Philadelphia, many tradesmen and not a few laymen believing that the two local clubs already in existence do

little or nothing to keep motoring before the public, only coming to life when the "antis" propose radical legislation.

Big Tour for Italy—Italy is announcing a tour on the lines of the Herkomer for 1907. The circuit will be called the Om-brie tour and includes a distance of over 300 miles. Financial aid is being sought for the project, which is being backed up by a number of big makers. Italy has been rather left in the cold for 1906, in view of the suppression of the Brescia race, and intends to make a great showing for the coming season.

Baird a Cup Winner—Fred J. Baird was the winner of the Cleveland Automobile Club's mileage contest for the quarter from June 30 to September 30, covering 4,841 miles. He was also winner of the previous quarter, his odometer having registered 4,318 miles at the close of the first quarter. L. I. Breyman was second with 3,665 miles to his credit. F. E. Stiversson's gauge showed a total of 5,141 miles for the last quarter, the highest mileage yet made by a member, but as he was a demonstrator and did not own his machine, he was disqualified, according to the rules of the contest.

New York Getting Better Roads—The work of improving many of the roads of New York state is now either completed or nearing completion. The repair of several of these highways must be finished this year and then, it is believed, an improvement will have been accomplished that will meet with the approval of motorists in all parts of the United States. While the roads will not be in perfect condition, they will be passable, and it is said will have been brought to that state where it will be easy to maintain them. The bids received for repairing the roads were disappointing to the supervisors.

PACKARD POSITION ON SIX-CYLINDER CARS

Detroit, Mich.—Editor Motor Age—We are much interested in the present six-cylinder agitation, and, while we have not previously voiced our sentiment, have carefully studied the situation and come to the unequivocal conclusion that the Packard company should not only stick to four cylinders in its own manufacture but should lend whatever influence it can toward the general continuance of four-cylinder cars as standard in touring car design. The writer recently returned from a visit to European automobile trade centers and is more firmly convinced than ever that six-cylinder cars are a fad and of much overrated consequence in the automobile industry, both of this country and of Europe. Like many other people in the American trade, I had, from current reading, gained the impression that Europe was a hot-bed of six-cylinder germs. I thought that many of the most prominent factories were making their greatest designing effort upon cars of this

type. I found, as a matter of fact, that six-cylinder cars are of no greater relative importance in the European industry than they are in the American trade. Here is an example of the way in which motoring papers and daily papers publishing motor car news have exaggerated the importance of the six-cylinder car until it has become the great hyperbole of the trade. Particularly was I desirous to visit the factory home of an English six-cylinder car which, on account of having won a notable road test, was commented upon and described and boosted in motoring papers of the whole world. I had seen it heralded far and wide in English, French, German and Spanish. I visited the sales headquarters and was courteously shown through them. I saw no six-cylinder cars; just the standard fours. I asked the manager: "Have you another establishment devoted to your six-cylinder cars?" He looked blankly at me a moment, smiled and then said: "Oh, we are not bother-

ing much with six-cylinder cars. We built one to use in some tests, but our factory is entirely devoted to making four-cylinder cars." The recent six-cylinder discussion and comment reminds me of the widespread and mainly gratuitous advertising that frequently caused great furore in the bicycle business over mechanical departures that turned out to be, as one would say in the vernacular, "false alarms." It is early to discuss motor car shows, but I will venture the assertion that at both the New York and Chicago exhibitions the present six-cylinder activity will be found to have dwindled into the usual scattering of "double threes" or "triple-twos" among the great volume of permanently recognized four-cylinder cars that are at present on the market. It is sure, for one thing, that the Packard company has not been and will not be tempted into the by-path of this fad. —Packard Motor Car Co., S. D. Waldon, sales manager.

American Motor League

Official Bulletin

National Headquarters, Vanderbilt Building, New York

MAP OF ROUTES NEW YORK TO GREENWOOD LAKE

The popular run to Greenwood lake may be made over a variety of routes, the best of which are shown on the map herewith. The distance varies from 53 to 55 miles, according to the route taken, the shorter being by way of Hackensack, Arcola, Hawthorne—or through Paterson at option of tourist—Haledon, Pompton and thence up the Wanaque river valley, following approximately the line of the New York & Greenwood Lake railroad. The other route is by way of Jersey City, Newark, Bloomfield, Montclair, Singac and thence by way of Pompton river valley to Pompton, where it joins the former route only to again leave it for a nearly westerly course along the picturesque river road—Hamburg turnpike—to Bloomingdale, Smith's Mills, Charlottesburg and Newfoundland, at which latter place the road swings directly northward through Postville, West Milford and Browns—the southerly end of Greenwood lake—and thence along the westerly shore to the northerly terminus, where is found the hamlet of Greenwood lake and most of the hotels. From Greenwood lake the trip may be made northward to Monroe and thence to Middletown, Newburgh and adjacent points. The route to Greenwood lake was delightfully described in a recent article in Motor by Secretary Tucker, of the New York Motor Club, and altogether the trip is one which the metropolitan tourist cannot afford to ignore. For the convenience of members residing in nearby towns, connecting routes are shown from Long Island City, Brooklyn, Jersey City, Bayonne, Elizabeth, Newark, the Oranges, Weehawken, Rutherford, Passaic, Englewood and other populous points. This map, and all others appearing on this page, will be printed in the official route books of the A. M. L., of which one copy will be given free to each member of the league. In the meantime, for convenient use these maps will be printed on cards and route descriptions will be printed in brief form on the backs of the route card and, with greater detail, in the route books which will appear later. The A. M. L. is an organization with a purpose. It invites to its ranks every motorist in the country. Full printed information on request. No initiation fee; dues \$2 a year. Address American Motor League, New York city.

